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SEPTEMBER 1957

HORTICULTURE

America's Authentic Garden Magazine

Dr. Abel

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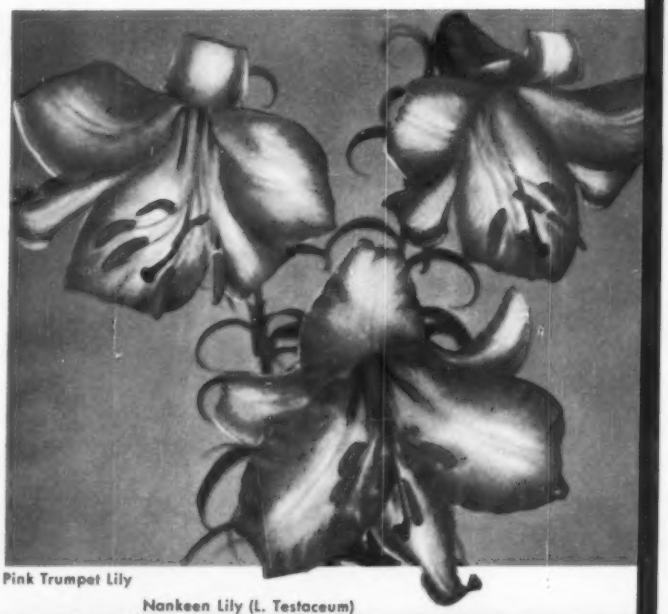

Pink Trumpet Lily

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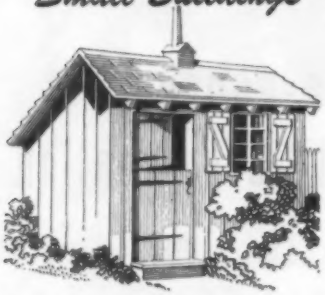

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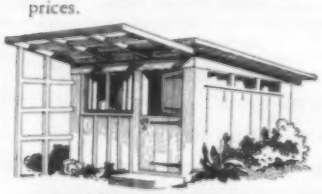

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Letter to the Editor

Hardy Plants for Maine

Dear Editor—Here in Maine, in our cold northeast corner of the country, we are always searching for distinctive flowering trees that are hardy enough to survive the cold winters.

Through constant experimenting, we have worked out a list of tried and true ornamental flowering trees, and among them we especially applaud the fringe tree (*Chionanthus virginica*), with its delicately fragrant white flowers; the sorrel tree or sourwood (*Oxydendrun arboreum*), with its glistening leaves; the American mountain ash (*Sorbus americana*), with its colorful clusters of berries in the fall; and Japanese tree lilac (*Syringa amurensis japonica*), with its large heads of creamy white flowers that appear after all the other lilacs have finished blooming.

Others that we have found dependable include the Carolina silverbell (*Halesia carolina*), with its charming white bells, a choice small tree that is too little planted in Maine; the little-leaf lilac (*Syringa microphylla*), which never fails to give us a second flowering in August; and the Siberian pea shrub (*Caragana arborescens*), with its yellow pea blossoms and gray-green foliage, the nearest to acacia that we can grow.

We also think highly of the white-flowering common pearl bush (*Exochorda racemosa*); the wild sweet crab apple (*Malus coronaria*) for its blush-colored fragrant flowers; the Russian olive (*Elaeagnus angustifolia*) and the cherry elaeagnus (*E. multiflora*), both of which have shiny silvery-green leaves; hop hornbeam or ironwood (*Ostrya virginiana*), with its intricate pattern of branches; and the black tupelo or black gum (*Nyssa sylvatica*), noted for the bright crimson of its autumn foliage.

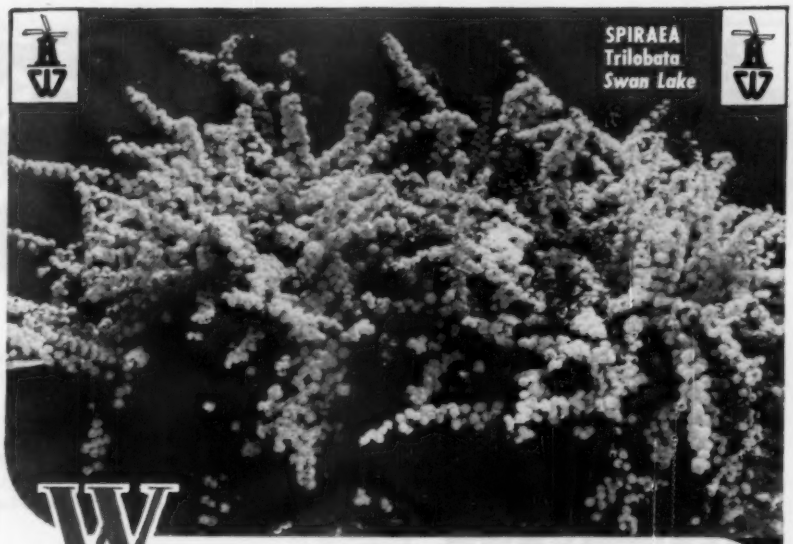
For summer bloom we rely on mountain stewartia (*Stewartia ovata*), with its creamy white cup-shaped flowers.

Some that we have tried without success because we are too far north include the hardy silk tree (*Albizzia julibrissin rosea*); waterer laburnum or golden chain tree (*Laburnum watereri*); and flowering dogwood (*Cornus florida*), which we have tried time and time again to no avail.

—Rosalind Richards, Chairman
A. M. R. Memorial Hardy Experiment Planting Group
Kennebec Valley Garden Club
Kennebec, Maine

Garden Planning Course

A course in Garden Planning will be given by Mrs. Francis Warren Mitchell, Hingham Garden Consultant, at the Boston YWCA, 140 Clarendon St., on Wednesdays, starting October 2 and continuing for five consecutive weeks, from 10:30 A.M. to 12 noon. The course is planned for new gardeners, as well as experienced amateurs faced with special problems. The fee is $10.00, and YWCA membership of $2.00 is required of all class members. The group will be limited to 20 in order to assure individual attention.



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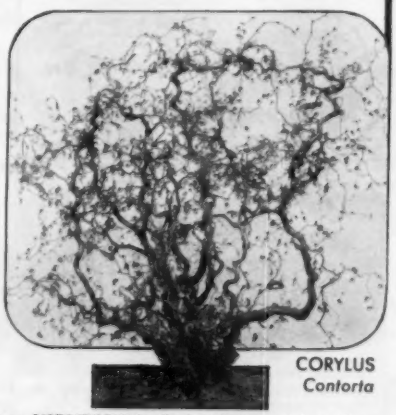

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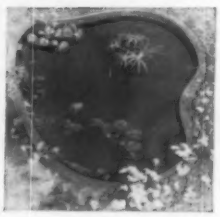

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NEW BOOKS

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Pleasing and Engaging

FLOWERS AND THEIR HISTORIES. *By Alice M. Coats. Pitman Publishing Corp., New York. 350 pp. $7.95.*

It is natural that the enthusiast for a hobby should talk about it, and of all such enthusiasts none are more vocal than gardeners, as the success of the garden club movement has happily shown. If a gardener should also be literate a manuscript will result and, if a publisher can be found, a book.

The urge to publish is doubled when an ingenuous writer has lit upon the lush gardens of the old herbals—Turner, Lyte, Gerard, Parkinson—and finds irresistible the temptation to quote quaint phrases or colorful comments. The result is usually another tussie-mussie book with an ephemeral life and a limited sale, most of it among the remainders. The intermittent stream of these books has tended to become something of a spate, and we have been offered, particularly from England, a diversity of titles without much accession to what is already available in others.

Standing out from among them, by reason of its readability and the inclusion of much material that is new to such eclectic books, is the recently published *Flowers and their Histories* by Alice M. Coats. Perhaps the title should have been preceded by the word 'Some', for what we have here is a series of about 160 engaging essays on border flowers and herbs, followed by several short biographies, making a book of 350 pages, substantial in size yet not so large as to be inconvenient in the hand.

It is attractively, though not extensively, illustrated with reproductions of old plates, colored and plain. The type is easy on the eyes and the printing is of the standard for which the Curwen Press is renowned. Altogether it is a pleasing, informative and entertaining book, admirably suited for a gardener's winter reading and well worth a place on any horticultural bookshelf.

Although Miss Coats does lean rather too heavily on the herbalists, chiefly Gerard and Parkinson, she knows it, and gives reasons in her Foreword, where she further disarms the critic by disclaiming any qualifications except love of the subject.

Flowers and Their Histories is more free than perhaps might have been expected from the foolish 'legends' which often exist only in print, copied by one naive writer from another, and from such Victorian sophistry as 'the language of flowers'. Miss Coats is no plagiarist and has obviously dug with an industrious spade in her original sources.

—F. C. COULTER

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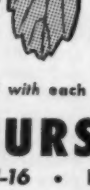

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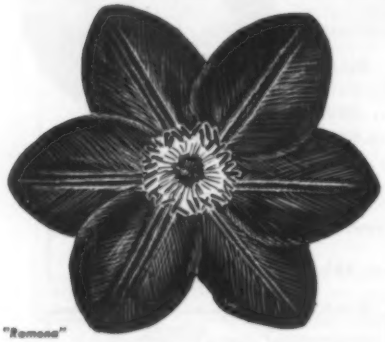

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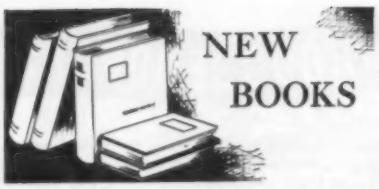

NEW BOOKS

Books reviewed on this page may be ordered from Horticulture's Book Dept., 300 Mass. Avenue, Boston 15, Mass.

A World of Wonder

GARDENING: A NEW WORLD FOR CHILDREN. By Sally Wright. *The Macmillan Co., New York, N. Y. 183 pp. $2.75.*

Parents trying to convince their children that gardening means something besides pulling weeds will find the answers in this book. Surely no one, except this author, has rounded up so many activities connected with gardens and their products. In summer youngsters may have fun with a strawberry barrel or a pyramid garden or perhaps a midget garden. Later in the season come the making of terrariums and dish gardens, the drying of flowers, the preservation of leaves and even a "magic garden" in the cellar. As the jacket states, the book is a cornucopia of stimulating ideas for boys and girls.

The Flowering World Explored

ALL ABOUT THE FLOWERING WORLD. *By Ferdinand C. Lane. Random House, New York, N. Y. 141 pp. $1.95.*

Mr. Lane does not, of course, tell literally all there is to know about all of the world's flowering plants, but he comes so near doing so that his book is highly entertaining as well as instructive. Although intended for young readers, few adults who thumb through its pages will be in a hurry to lay it down. There are 60 illustrations, all so well executed that credit must be given Russell Francis Peterson, the artist responsible for them. Considering its low price, this book is not to be overlooked.

Remember Your Trees

TREE CARE. By John M. Haller. *The Macmillan Co., New York, N. Y. 224 pp. $5.95.*

There is much in the way of tree care which a home owner can do himself. Also, there is much which should be left to the experts. Mr. Haller, a well-known arborist, will prove a skillful guide by aiding the reader in selecting the trees best suited to his requirements and in meeting their needs as they grow and develop. He tells how to deal with the pests which damage older trees, but foresees the time when plant diseases will be largely eliminated. Much has already been accomplished, he writes, through chemical and antibiotic treatments. Questions often asked about trees in their relation to the law are answered, as well as those which come up when a tree doctor must be consulted. This book is recommended for a place on the home owner's bookshelf.

Broader Horizons

READING THE LANDSCAPE. By May Theilgaard Watts. *The Macmillan Co., New York, N. Y. 230 pp. $4.75.*

Studying the landscape is good reading as this author presents it in her fascinating and unusual book. It means finding history, romance and adventure in forests, fence-rows, bogs and tree rings and the records made by rain and fire, as well as the animals. There was much traveling before this book was written and the many sketches were made to adorn the book. All this is in the field which naturalists call ecology, but that fact makes it none the less interesting.

Sketches add materially to the interest of this fascinating and unusual book

Commercial Vegetable Growing

VEGETABLE CROPS. *By Homer C. Thompson and William C. Kelly. McGraw-Hill Book Co., New York, N. Y. 611 pp. $8.50.*

This, the fifth edition of a widely used textbook, has been revised to include the most recent discoveries in the growing, harvesting and marketing of vegetable crops. There have been many drastic changes in market gardening methods and the two well-known Cornell University professors who have authored this large volume describe them in detail. Many illustrations are included.

On the Care of Succulents

THE CULTIVATION OF SUCCULENTS. *By H. Jacobsen. John de Graff, New York. 108 pages. $2.50.*

Dr. Jacobsen, realizing that his monumental work on succulents apart from cacti did not meet the needs of those who grow succulents as house plants or even those having small greenhouses, wrote this much smaller book in which he deals with the cultivation and care of this extensive group of plants. Translated from the German by Vera Higgins of London, it will be eagerly sought by interested amateurs.

Gardening Indoors

INDOOR PLANTS AND HOW TO GROW THEM. *B. A. Bertrand. Philosophical Library, New York. 92 pp. $4.75.*

Excellent illustrations, many of them in color, make this an attractive book, but the text, translated from the French, offers little to American plant growers and, indeed, may confuse them. The warning that all parts of the lily-of-the-valley plant contain a violent poison is one, perhaps, to be kept in mind.

Meaning and Purpose of Botany

BOTANY FOR GARDENERS. *By Harold William Rickett. The MacMillan Co., New York, N. Y. 236 pp. $4.50.*

It is stated by Dr. Rickett that he has undertaken to present the basic facts and principles of botany for readers who have had no previous schooling in science. He claims also that he has omitted the "horrific array of botanical terms" commonly found in books dealing with this subject. With such an assurance, the amateur gardener need not hesitate to buy this book, which will reveal why plants act as they do and the remarkable processes by which they come into being. Botany For Gardeners will give amateurs a new understanding of the material with which he is working.

A New Edition

INSECT PESTS OF FARM, GARDEN AND ORCHARD. *By Leonard Marion Peairs and Ralph Howard Davidson. John Wiley & Sons, Inc. 661 pp. $8.50*

Any book dealing with entomology is out of date in a few years, so many and so frequent are the changes in this field. For that reason it became necessary to revise and rewrite this well known textbook to bring the fifth edition wholly abreast of the times. Although not indicated in the title the book has an important section devoted to insects which are injurious to stored products and household goods. Finally there is a chapter describing insects which attack animals and the methods by which they can be eradicated.

Calling All Naturalists

IN PONDS AND STREAMS. *By Margaret Waring Buck. Abingdon Press, New York. 72 pp. $3.00.*

This book was selected by the Boy's Clubs of America as the best liked by Boy's Club Members. Trained as an artist, Miss Buck is also a naturalist and bases her work on personal observation and research, which she also has carefully checked with experts. This book should stimulate a genuine interest in exploring the many small living creatures and plants found in and around the edges of ponds and streams. Surely, it should create a new delight in future excursions to fresh water ponds for every time you discover something new along with a greater awareness of the world of nature. After reading about what to look for it is fun, too, to be able to identify what you find and see.

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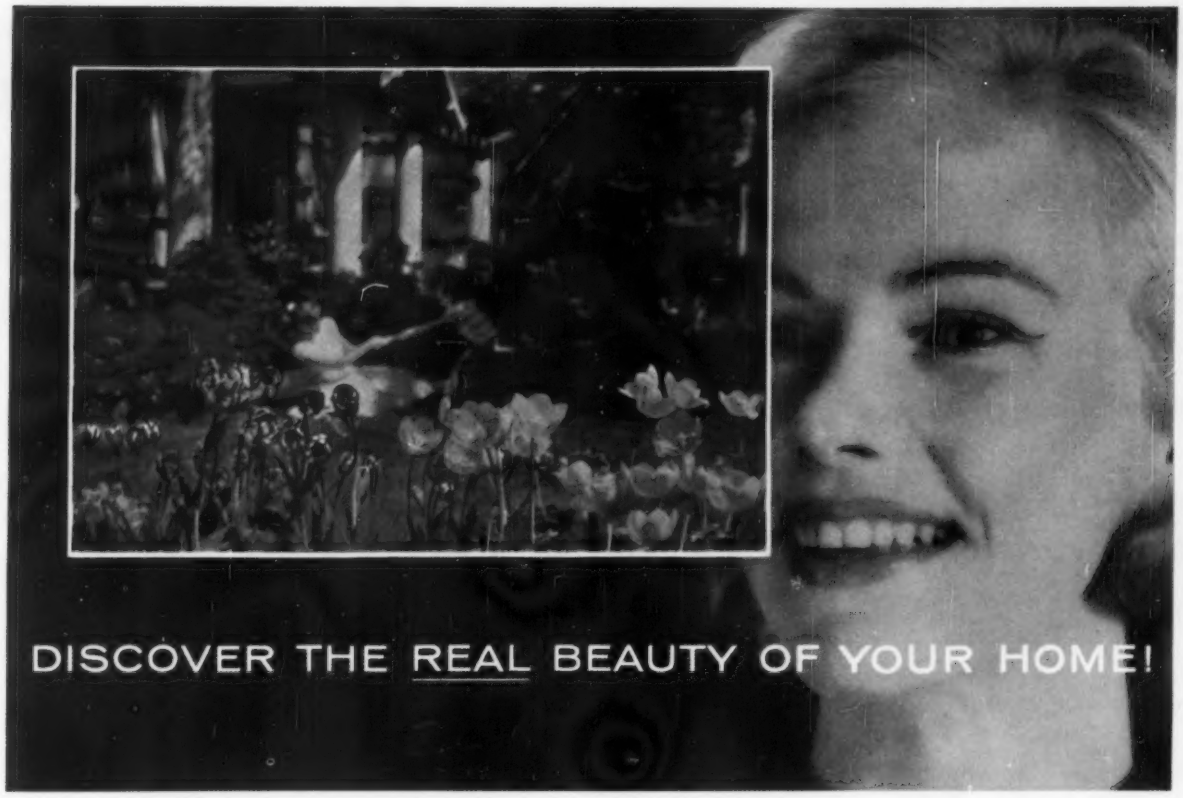
Why Plant in the Fall?

FALL PLANTING TIME is here and since there are so many advantages in favor of a greater amount of planting at this time of year, it is difficult to understand why so many gardeners think they have to wait until spring to set out most trees, shrubs and perennials.

If you have vacant places in your shrub border, or you are planning a new shade tree for your lawn, or if you have the problem of landscaping a new house ahead of you, now is the time to get a head start for 1958. At this time of year, most nurserymen will be able to give you more attention, more help and better service. They are not as busy now as they will be next spring when everyone wants to plant. If the nursery of your choice is close enough to drive to it, you can see the plants growing and choose those best suited to your needs. Then you can have them delivered as soon as you need them.

Many gardeners fail to realize that while the top growth of plants is limited to the warmer season of the year, root growth continues over a much longer period. One of the big problems in transplanting trees and shrubs is to re-establish sufficient root growth to maintain the top. Thus, there is every reason for transplanting at the time of year which will favor root development as opposed to top growth. Fall is the ideal time.

A tree planted this fall will be able to re-establish feeder roots during the winter months, thus compensating for those roots broken or damaged in transplanting. Then, too, the newly planted tree will be off to an early start, absorbing plant food for the top growth that will develop in the spring of 1958. When you wait until spring to transplant, the top growth often starts as soon or even sooner than the root growth. Naturally this places a heavy burden on roots that have been damaged, even with the most careful transplanting job. But don't forget to water until the ground freezes hard.



Create your own colorful setting, your own atmosphere of beauty around your home, and you will express all the love and warmth within.

Visualize the loveliest of Spring flowers as they will surround your house—tulips, daffodils, hyacinths, and crocuses. Make this vision come true by planting Government-inspected Dutch Bulbs this Fall. Inexpensive, sold everywhere; and as long as you can dig a hole in the ground, there's still time to plant Dutch Bulbs.

Discover the real beauty of your home.

PLANT DUTCH BULBS THIS FALL

Camellias

All-America Selections

CINDERELLIA, *the All-America Camellia Selection for 1957, was the first camellia to receive this honor. The new variety achieved this distinction in competition with new camellias developed in the United States and abroad in a selective three-year trial conducted by the All-America Camellia Selections. Produced freely on vigorous plants, the crinkly-textured satiny flowers measure about four inches in diameter.*

BUDDHA, *the All-America Camellia Selection for 1958, is the second camellia to be given this distinction. Originating in China, it brings an international flavor to the extensive three-year competitive trials conducted by the All-America Camellia Selections. Flowers of Buddha, unlike those of the* Camellia japonica *varieties, undergo transformations in form from the time they first open until they mature. Each petal of the unusually large blossoms gradually increases in size, arching inward and curving as the bloom develops. At maturity, flowers average from 4¾ to 6½ inches in diameter; 2½ to 3 inches in depth.*

Camellias Are Hardier Than You Think

Frances R. Van Gilder, Ocean City, New Jersey

THE FOUNDING FATHERS of Cape May County, New Jersey, were seafaring men. In the old churchyards, many stones are marked "Lost at Sea", while the sailing vessel is a common symbol above many an old family name. Like all travellers, the captains and their crews brought home souvenirs from their voyages, not the least of which were plants.

Crape myrtle, which came from the Carolinas, is a common sight around the early homes, where the magenta pink and pale mauve blooms of these big scale shrubs line many a lane. Although exposed to cold winters, on many occasions, they continue to grow and thrive. Even though the crape myrtle is a woody-stemmed, waxy-leaved plant, similar to the camellia, it apparently survived transplanting better than the camellia. We have only one record of a camellia plant in Cape May county as early as 1880.

Since those early days, camellias have been improved and toughened, so that we are now able to grow them in this area. Because of the moderating effect of the ocean and surrounding bays, the weather in a normal season is reasonably good for camellia culture. The winter of 1955-56 is a poor example, for it was colder than usual. However, the official average weather reports indicate the degree of cold which may normally be expected.

Seed pods of the camellia

The temperature range is surprisingly small, although to us it seems uniformly miserable at times. High northeast winds, which swoop down on us, bring the salt spray that damages many shrubs and trees. Leaves are burned and turn brown. Local nurserymen recommend, as a precautionary measure, that all plants be hosed down with fresh water after such a salt coating. This treatment, however, is not necessary for camellias. Curiously enough, the beautiful foliage continues to glisten and shine despite the salt spray.

OFFICIAL WEATHER REPORTS

Ocean City, New Jersey, Winter 1955-1956

Month	*Maximum*	*Minimum*
November	53	39
December	40	25
January	39	28
February	45	33
March	48	34
April	53	41
May	76	41

My own experience with camellias is not of long standing, but my enthusiasm for growing them is that of a zealous convert. When planting my first specimen, I followed the rules carefully, and the results were more than satisfactory. In subsequent plantings, I have not been tempted to improve on standard methods. Under similar conditions, these procedures should apply and prove equally satisfying.

Location is all important. Partial shade is desirable, and in this locality, where shade trees are something of a rarity, the north side of a house is the best location. This fact was demonstrated clearly this year, when an unusually hot day caused severe browning to the blossoms of plants in a sunny location, while those on the north side remained in good condition. The hot sun of the afternoon is the most damaging.

Watering is vital to the life of camellias. Since their roots are close to the surface of the soil, they dry out quickly in warm weather. A thorough soaking once a week has proven sufficient in seasons of normal rainfall, but puddling around the roots should be assiduously avoided. The beginner should remember that newly transplanted camellias must be watered thoroughly until well established.

Drainage is also vitally important. I have found it good practice to set my plants somewhat higher than the surrounding bed so that moisture will not accumulate around them. Since the roots are close to the surface, avoid cultivating the soil around the plants.

Fertilizing is a highly individual matter. Heavy feeding is not necessary, but if you prefer heavy growth and blooms, it is possible to push the plants. For most gardeners, who are content with normally generous new growth, two or three applications (about two handfuls for each plant) of a commercially prepared camellia fertilizer are sufficient. I make the first application at the end of the blooming season. This year the growth on my established plants was phenomenal. Never before have I experienced such an abundance of new growth, despite the fact that we are in a near drought condition.

I have found it best to set out new plants in October or November. If it is not possible to plant them then, wait until early spring. The condition of the plant and the change of temperature, to which plants, shipped from southern nurseries, are exposed, must be taken into consideration when transplanting. This year I set out small, newly grafted plants which were brought from the south in full bloom. Thus far they have shown no sign of set back.

Early spring snow seems to have no serious effect on

Turn to page 468

Tulips, blue phlox, candytuft and pansies provide the dominant note of color when the dogwoods are in bloom

One Woman's Garden

The Story of our Front Cover

Mary Alice Roche, Caldwell, New Jersey

"IT'S THE MOST beautiful garden," my friend said enthusiastically. "Just wait 'til you see it; there isn't anything like it."

I listened politely, but said nothing. We had often heard great reports only to arrive at the promised land to find a mass of flowers with no apparent design or well-laid out beds with no bloom. Often we have been told that "the roses have just gone by," that "the clematis was ruined by that rain last night" and that "the phlox will be in full bloom in a week or two."

"A beautiful garden" does not mean the same thing to the average observer that it does to a garden photographer, who wants a *picture,* which means good design and background, flowers in full bloom and good weather, too.

As we drove up to the home of Dr. and Mrs. Edward Howe, in New Vernon, New Jersey, I noted the attractive landscaping, though not a flower was in sight. When we passed the front entrance, and went around the garage to the backdoor, before us lay a breath-taking picture: a broad ribbon of bright gold marigolds, pink petunias and deep blue *Plumbago caerulea,* spiked with white colchicums, ran along the top of a low stone wall, against a backdrop of green lawn, brilliant autumn foliage and blue sky. A walk of mellowed brick beside the flower beds led through a miniature rose garden to a comfortably furnished, shaded terrace.

Here was a beautiful garden by any standard, with masses of bloom, in well laid-out beds, where the size, shape and color of the plant material were artistically used to create pleasing line and design and the whole placed for enjoyment from any angle.

"The Howe's must have been gardening since they were children," I thought, "or they must have a professional gardener. This kind of thing doesn't just happen". Then I met Mrs. Howe and learned how it came about.

"This is my garden", she told us. "Of course, it's for the enjoyment of everyone, but what I mean is that I do the work myself. The children each have their own plot below the wall. Janie (aged seven) loves gardening and really has a green thumb. She brings in wild flowers from the woods and the 'discards' other people can't grow.

Professional Advice

"Dr. Howe plows the vegetable garden, where we also grow berries, glads and dahlias, and that is about all. However, I must give credit to our landscape architect, who 4 years ago, before the house was finished, studied exposures and made a blueprint for us which has been a great help. He suggested that we move the terrace away from the house so evergreens could be planted in between, that we build the wall at the edge of the terrace, which is the basis for the flower beds, and that we add some desirable shrubs at strategic points. Otherwise, this garden I laid out and made myself, though I had never done any gardening to speak of before."

We learned that the long beds are full of bloom from early spring to late fall. First come the bulbs—scarlet Eichleri tulips, yellow and white daffodils with lavender-blue grape hyacinths and pink and white tulips. Then come the candytuft and blue phlox.

These are followed by perennials: pink columbine and dianthus, blue Chinese delphinium and Carpathian bell-flower (*Campanula carpatica*) and clump speedwell (*Veronica maritima subsessilis*). Germander, with its short rosy spikes of bloom which the bees enjoy, starts to flower in July, shortly after the annuals, which are set out in May. These keep blooming until frost, when the nearby chrysanthemums and autumn foliage of maple and dogwood join them in the grand finale.

"Of course, I didn't start with this in mind," Mrs. Howe said. "To begin with, I put in whatever plants I liked—peonies, poppies and iris. I soon found they were too big and tall for the spot. They cut off the view from the terrace and made us feel hemmed in. So I transplanted them below the wall

where their blooms could be seen without obscuring the view. From then on I kept to low plants, very low in front and not too much higher in back. Chrysanthemums I pinch and pinch back to keep them low. It makes for maximum bloom, too.

"Then at first I planted everything in perfectly straight lines, but soon found I needed to get away from all those straight lines, rather than accentuate them. Since then I've been aiming for a curving ribbon of bloom. My results are achieved by working with a garden plan, laid out on correctly-scaled squared paper. Each plant, with its size and color, is marked in the square exactly corresponding to its location in the beds. By consulting my plan, I can plant new bulbs without danger of digging into the old ones. By September I look to find where the colchicums will be coming up, so the rampant plumbago can be trimmed back to give them light and air. Such a plan is indispensable when carrying out designs and color schemes.

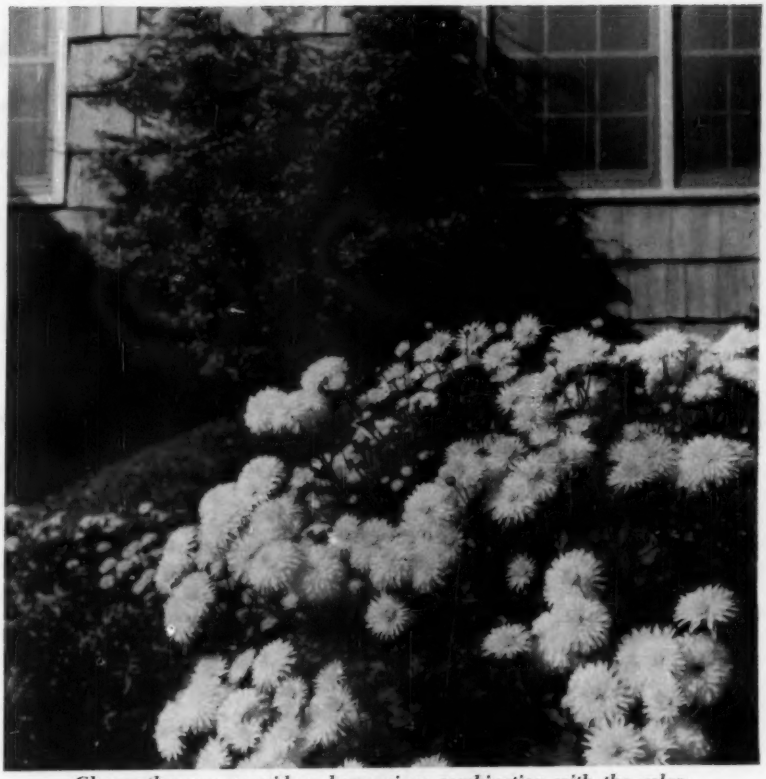
"And right now, while this year's garden is in bloom, is the time to decide about next year. I'll soon be planting more pink and white tulips to make deeper curves in my 'ribbon', with two shades of yellow tulips and some in a dark tone for accent.

"When the delphinium and veronica were in bloom, I made notes in red as to where I will replant them when I divide them in the spring. The chrysanthemums were left on my doorstep by a friend, and I didn't know what type or color they would be. Now that they are starting to bloom, I can decide what to do with them for a more pleasing effect next fall. I'll divide the whites and space them better, and add a few more whites and some reds. The yellow, blue and white of the annuals is good, but I'd like more white."

When we commented that we thought it seemed a lot of work for a busy woman, Mrs. Howe did not agree. The biggest aid in caring for a garden by oneself is a good mulch of buckwheat hulls. This keeps down the weeds, yet allows rain to go through to the soil, which stays moist and cool.

Buckwheat hulls, light and loose, can be raked aside from the spot where a new plant is to be set and then put back. Since manure or compost cannot be spread easily on a hull-mulched garden, they are dug in well at planting time. In addition, a liquid fertilizer is applied in the spring.

"So, with practically no weeding or watering, all I have to do is some planning and planting in the spring and fall. The rest of the time I just enjoy my garden," added Mrs. Howe. "After all, that's what a garden is for, isn't it?"



Chrysanthemums provide a harmonious combination with the colorful orange fruits of the pyracantha espaliered against the house

An espaliered flowering peach softens the wall of the house and adds to the interest of this chrysanthemum planting

Brick walls at Sissinghurst Castle are planted with vines and shrubs are massed in front of them. Looking toward the South Cottage, the vista is enhanced by masses of tulips in pastel colors

Sissinghurst Gardens in Kent

John Burton Brimer, Suffern, New York

AMERICAN GARDENERS seem to feel that most English gardens are the result of centuries of care and that it is practically impossible to achieve these mature effects in a lifetime, let alone a few years. Yet, in little more than twenty years, a garden has been created at Sissinghurst Castle in Kent which should be an inspiration to gardeners everywhere. Although its many modern features combine with enough of the old to make it compatible with its surroundings, the garden gives an impression of maturity, of having been there always.

This garden was brought into being by V. Sackville-West, the eminent poet and novelist, and her husband Sir Harold Nicholson, formerly prominent in government circles. Actually Sissinghurst is not a castle. Originally it was a fortified manor house, built in the time of Queen Mary of Tudor fame, by an ancestor of Miss Sackville-West. It is gratifying to know that, after centuries of neglect, it has been brought back to use and beauty by a member of the same family. Sir Harold has cleverly used the remaining walls about the courtyards as a framework for the garden design and, collaborating with Lady Nicholson, has clothed the bare bones of that design with plantings which enhance the beauty of the old Tudor brick walls.

The appointed day for our visit, late in May, dawned with a drizzle. By the time we arrived at Sissinghurst's mellow brick gateway, the drizzle had become a near-cloudburst. However, Lady Nicholson descended from her study with such a warm welcome that most of the day's gloom was immediately dispelled.

"Well, you *have* chosen a day for your visit, haven't you?" she exclaimed. "Such ill luck." I suggested that we might talk then, returning next day for a visit to the gardens, since the following day was Saturday and she might have weekend plans. She invited us up to her study and we dried off as we talked to her.

At the time Sissinghurst was purchased by the Nicholsons, it had fallen into ruin except for a few rooms and the two Tudor towers which crown the courtyard gateways. For the last hundred years it had been used as a farm, and the courtyards were choked with debris and trash. The walls were overgrown and mouldering, the moat filled with weeds. It must have taken great imagination as well as courage to visualize in that ruin the possibilities which have since been realized.

It took three years to clear out most of the rubbish and take stock of the advantages and disadvantages before serious planting could begin, she told me. Hornbeam and yew hedges were then planted, looking so forlorn and tiny that she wondered if she would live to see them large enough to enjoy. They are now kept beautifully trimmed

at about eight feet tall. Sir Harold planned the long axial walks with small intimate gardens opening off them, each planned for particular effects at certain times, keeping the design formal, yet the planting so informal that there is no feeling of rigidity anywhere.

I asked Lady Nicholson if, like most gardeners looking backward, she felt there were things she wished she hadn't done. She answered immediately and frankly that she would certainly change some things, mainly the shrubs. She would use more and better varieties of flowering shrubs and trees and place them more tellingly. This interested me particularly because, for more than a generation in American gardens, flowering shrubs and trees have been used for lavish flower and color effects without the labor involved of dividing and transplanting perennials and annuals.

It is difficult to know what questions to ask when one has never seen the garden, even with a most cooperative person like Lady Nicholson. After we had conversed about twenty minutes, we were both relieved when the capricious English sun emerged and shone brilliantly.

"Come quickly and take advantage of this before it changes its mind," she advised. Then we trooped down the stairs and puddle-hopped around the garden, its shining freshness giving added point to the explanations of its co-maker. Although it is to Americans a sizable garden, the owners maintain it with only three gardeners and constant work by themselves. I could see why they were turning to more flowering shrubs. Already, though, there were many flowers against and on the walls. A clematis studded with pale pink blooms framed a gateway and against a tower wall a ceanothus was trained which sported a treasure of blue blossoms. Figs, climbing roses and other vines are used elsewhere on the walls.

One of the features of the place is the pleached lime tree alleé. (We call them lindens in America.) We had been told that it was Sir Harold's particular bailiwick, when he joined us. The year before there had been considerable discussion about pruning the lime trees—whether to prune back hard as is done on the Continent for summer shade, or to leave some minor twigs which would bring forth overhead greenery to complement the masses of spring bulbs and early perennials which line the flagged walk under the limes.

In the end, one row of trees was pruned hard, the other lightly, and it was quite apparent that early greenery clothing the branches which are interwoven above the spring flowers was much more pleasing than the ugliness of the bare branches pruned in European fashion. It was stimulating, too, to find that gardeners who had already achieved such a mature, finished-looking garden should constantly be trying to improve their effects and procedures.

At one end of the lime avenue lies a copse of filbert nut trees which has been so heavily underplanted with primroses of every description and color that the Nicholsons justifiably call it their Persian Carpet, and enjoy it daily for more than six weeks each year. Elsewhere the garden has been as carefully planned as was this early spring garden. The rondel garden is devoted mainly to old-fashioned roses. I must return to see it some June when its roses, poppies, iris and eremurus will show up magnificently against the yew hedges and brick walls. Another garden which would be enchanting in early Summer is the white-and-grey garden with its avenue of almond trees draped with old white roses and clumps of regal lilies, gypsophila

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Sir Harold Nicholson's pleached lime walk is bordered with masses of spring bulbs, beautifully harmonious in color. At the end of the paved path is the nut copse, underplanted with Persian carpet of primroses

Guinea-hen-flower (Fritillaria meleagris) does well in rock gardens

Color Your Garden With Bulbs

Plant Them With a Purpose

IF FOR NO OTHER REASON, gardeners look forward to fall because it is bulb planting time. Somehow there is a keen sense of pleasure that comes from carefully placing the bulbs in the warm, moist earth to root and sleep through the long cold months. But as we plant, we dream up pictures of how these bulbs will look when in bloom, either by themselves or in combination with other plants that flower at the same time.

When selecting bulbs for your garden, plan for the miniature as well as the big-scale kinds, the early flowering as well as the late. Thus you can enjoy a picture that will start with the first eranthis or snowdrops and finish with the last of the tulips, not to mention the many kinds of lilies which flower from early summer through the late fall.

Blue, pink and white Spanish bluebells combine with early perennials

The earliest to bloom usually give us the greatest thrill simply because they are the first. Eranthis or winter aconite, with its cheery yellow cups, often starts the season off and is followed by snowdrops and crocus. These little bulbs look most effective when planted in groups or colonies where they are allowed to multiply and naturalize.

Early flowering trees or shrubs, such as cornelian cherry, Chinese witch-hazel, corylopsis, winter honeysuckle or February daphne, can be underplanted with snowdrops, crocus, scillas, chionodoxas, grape hyacinths, snowflakes, Dutch hyacinths, puschkinias and early daffodils and tulips.

As the season progresses, allow for the showier and larger flowering bulbs, the many kinds of daffodil and tulip species, the large flowering daffodils and the stately so-called May tulips, the fritillarias, Dutch iris and lilies in variety for even later bloom.

Finding suitable locations for these bulbs calls for careful planning beforehand. The species daffodils and tulips are appropriate in rock gardens where they will keep the company of arabis, gold dust alyssum, aubrieta, arenaria, primroses and other early flowering rock plants. In flower borders, daffodils and tulips which flower later combine harmoniously with bleeding heart, doronicum, blue phlox, pansies, hardy candytufts, early iris, Virginia bluebells, forget-me-nots and pansies.

Early flowering waterlily tulips (Tulipa kaufmaniana) look best when planted in sizable clumps

Among the small bulbs, crocus still possess the power to warm our hearts the most. No garden is complete without a few of these spring harbingers

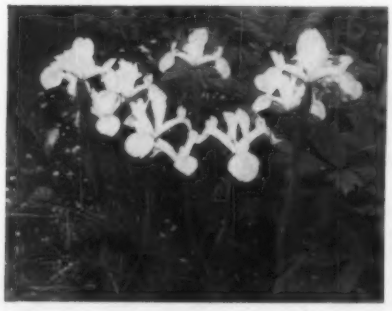
Plant snowdrops where they will be able to form a happy little colony

Dainty scillas provide a touch of true blue in early spring gardens

The various kinds of bulbs are also ideal for combining with flowering trees and shrubs. Did you ever try planting daffodils, in white and gold, around a particularly attractive specimen of forsythia?

Then, too, did you ever consider placing a clump of tall red or rose colored tulips in front of a white azalea? And how about pink tulips and a lavender azalea underneath the canopy of a white-flowering dogwood?

The planting rules for bulbs are basically simple. A sunny location and soil that provides good drainage is necessary for all. If you are working with



The attractive Dutch iris make excellent cut flowers for arrangers

soil that tends to be heavy, lighten it with sand, peatmoss or sawdust. Often, mixing a handful of sand with the soil on which the bulb is placed works out just as well.

Although planting depth varies with the bulb, a general rule to remember is to cover bulbs with soil that is equal in depth to two or three times the diameter of the bulb.

Mulching after the ground freezes is advisable, and then all you have to do is to wait for the warmth of sun and rain to unfold the magic that will reward you many times the effort and expense you put into it this fall.

READERS' QUESTIONS ANSWERED

What are some plants that I can start now for winter bloom in my cool home greenhouse? I am especially anxious to have flowers during January and February.

For winter color in your cool greenhouse, sow seed of Chinese forget-me-not, schizanthus, browallia, calendula, snapdragon, stock, marigold, sweet alyssum and many other kinds of annuals. In addition you can rely heavily on a great variety of bulbs, such as crocus, narcissus, hyacinth, tulip, Wedgewood iris, oxalis, ranunculus, freesia and anemone.

☆ ☆ ☆

What is the best time to move or plant Christmas roses?

Christmas roses are best planted in the fall when cool, moist weather enables them to make strong root growth and thus become established before winter sets in. Use a rich, loamy soil and add humus, as well as some bonemeal and limestone. When the ground freezes, apply a mulch of straw, hay, evergreen boughs or other light, airy material to protect plants from wind and sun and the injurious effects of heaving.

☆ ☆ ☆

I have some fall asters which I want to move elsewhere. Should I transplant them this fall after flowering is over?

Since fall asters flower so late in the season, the time to transplant, or divide, them is in the spring. If moved after flowering, plants do not have sufficient time to make good root growth before cold weather. This holds true for all late flowering perennials, such as chrysanthemums, heleniums, bocconia, boltonia, hibiscus and helianthus.

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Is spring or autumn the best time to plant lily bulbs?

Although many kinds of lilies can be planted in the early spring, the fall is the best season to plant all kinds of lilies. The madonna lily, however, requires immediate planting, since it sends up a cluster of green leaves before cold weather arrives. All other lilies may be planted through September, October, November and even December, provided the ground does not freeze. Planting the bulbs, however, as soon as possible results in good root development.

My dieffenbachias are tall and leggy. Can I cut off the tops and root them in water?

The tops of your dieffenbachias, or dumb canes, will root very easily in water. In fact, if you wish, you can continue to grow them in water in the manner of philodendrons and Chinese evergreens. If you cut back the remaining stems of the original plants to about six inches, new sprouts will appear to form attractive plants.

☆ ☆ ☆

I would like to try forcing cape cowslips or lachenalias into bloom indoors. Do they have any special cultural requirements?

If you can provide lachenalias with cool growing temperatures, you will be able to grow them successfully indoors. Pot the bulbs, from September to November, placing six in a six-inch pot. A suitable potting mixture consists of two parts garden loam, two parts humus and one part coarse sand, plus one teaspoon each of bonemeal and dehydrated manure to each six-inch pot of mixture. Place potted bulbs in a cool place or coldframe that is protected from frost for several weeks until they make strong root growth. Then bring indoors to a sunny window where day temperatures are around 50° F.

☆ ☆ ☆

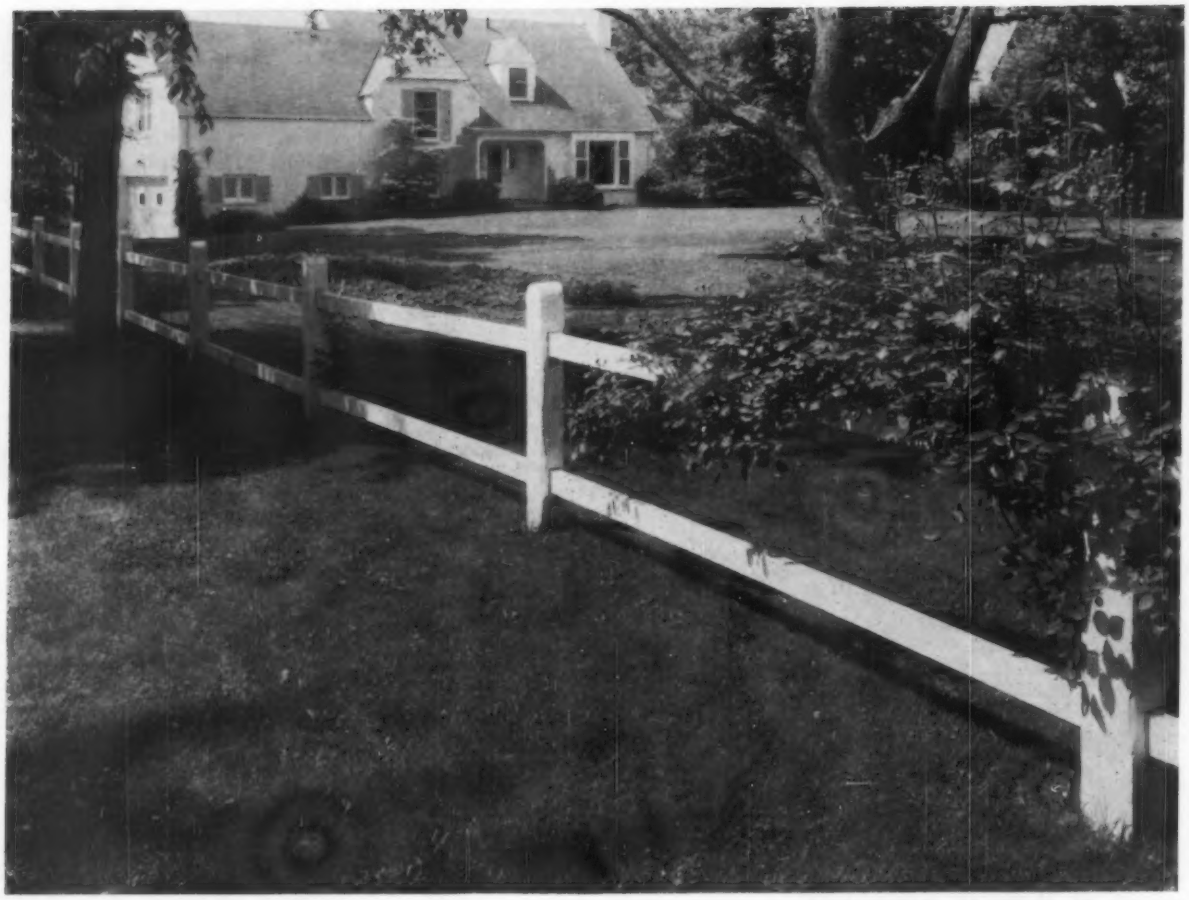
I have a blue hydrangea that bloomed beautifully this year, but was told not to trim it now as it will not flower next year. What shall I do?

Since blue or French hydrangea (*Hydrangea macrophylla*) flowers on the growth produced during the past season, it should not be pruned now, otherwise you will cut down on the amount of flowers. At this time, remove old blossoms and any dead or superfluous growth. Then in the early spring, as soon as the buds begin to swell, and this occurs early, cut away wood killed by the winter. In cold sections of the country, where there are several below freezing readings, the winterkill is generally considerable.

☆ ☆ ☆

I have some peony plants that develop small buds, which dry up before flowering. What causes this? Other plants nearby bloom prolifically, so I doubt if a disease is to blame.

If peonies are planted too deep, buds will fail to develop properly. Since your other plants flower normally, too deep planting might be responsible for this condition. Check your nonflowering specimens, and if the crowns are more than one or two inches below the surface of the soil, lift and set the roots higher this fall.



A smooth, velvety lawn reveals the importance of a good seed mixture, periodic feeding, watering and careful cutting

What's Ahead for Better Lawns

Robert W. Schery, Director, Better Lawn and Turf Institute

MAYBE IT'S JUMPING the gun on a New Year's prerogative to polish the crystal ball, predicting things for the future of your lawn. But a neck stuck out in September should be no more risky than one in January. September ends the "fiscal year" of active lawn making, except perhaps for late feeding of bluegrass, which is crisply green and growing fat at this favored season.

It is often puzzling to see new items garner the publicity on lawns, while old stand-bys are taken for granted and seldom share the limelight. Many new selections and strains of turf grasses are being tested or have been released from scores of research centers. Yet, it will be a long, long time before standard turf grasses are materially displaced in seed mixtures.

Some, such as Kentucky blue-grass, show a natural flexibility and wide adaptability that is hard to match in an isolated strain of restricted heredity. Several named strains of Kentucky blue-grass have already been released, and many others are under test at turf-grass research centers. I wonder if such strains as the Arboretums, Deltas, Merions, Newports, Parks and Troys of the future will not find use largely, mixed in small percentages, to "enrich" standard Kentucky bluegrass?

Thus a proven lawn grass, having survived nature's trials through the decades in the various climatic zones, can provide assured value. Man's "creations", with limited testing, can add those attributes for which chosen, and, if able to survive well under the local conditions, gradually usurp the lawn.

Actually, the selection of new strains of lawn grass is by no means confined to Kentucky blue-grass. Added to the older creeping red fescues (Chewings, Illahee and Trinity) are such newcomers as Pennlawn, selected for superior performance at State College, Pennsylvania. No earth-shaking additional strains appear imminent.

A multitude of creeping bent-grasses have been isolated for golf course use. Recently, Penncross has been an attempt to employ the advantages of hybridization, along with the ability to start it from seed. There have been fewer selections of the Colonial types (*Agrostis tenuis*), although Astoria, Highland and Rhode Island are well-known names in lawn seed. Need still exists for a Colonial bent-grass that is entirely free of the clumping characteristics of the creepers. Selections under test may bring such improvement in the years ahead.

Perhaps the most drastic changes are underway in southern-style grasses. Old

volunteer Bermuda is receiving competition from literally hundreds of new named (and still unnamed) selections. Not only the southern putting green of the future, but also the home lawn, may be graced with finer-texture, better-colored Bermudas. Limiting their use, however, will still be the need to plant vegetatively, since true-breeding seed cannot be had.

Even in middle latitudes, as far north as St. Louis, Bermudas will receive some use by gardeners interested primarily in tight summer growth (but indifferent to off-color effects in autumn and spring). Neither Bermuda nor the much advertised Zoysia can provide the desirable cooler-season sod that results from a blue-grass-mixture. U-3 and even southern selections as Sunturf, Tiffine, Tifflawn and Uganda, survive most mid-latitude winters.

Zoysias are the most recent rage in lawn grass advertising. Meyers, a thick-growing, hardy type, has been marketed in northern states where it does not green up attractively until June and goes off-color again by October. I can see no future for Zoysias in blue-grass country. They are green for a short season, are slow in growth, requiring two or three years to form a sod, and need to be hand planted. Attempts to maintain blue-grass-in-Zoysia, to cover both cool and warm seasons, have been less than successful. We still await a persistently satisfactory marriage of good lawn grasses affording both northern (cool season) and southern (summer) needs.

Zoysias in the South

Yet, in the south, where growth is possible most of the year, Zoysias by themselves are good. A number of selections mostly derived from the matrella strain, are in the offing. Others, already released, such as Emerald, are making the most outstanding southern lawns. Improvement is also being attempted on St. Augustine. Locally, dichondra (not a grass, but a member of the morning-glory family) will find increasing favor, as it already has in Los Angeles.

Although still some distance around the corner, soil sterilization of new seedbeds will doubtless receive increasing attention. Chemical sterilants can kill all vegetation and weed seeds. Under such conditions, seeded grass starts with a clean slate, free from competition. Already, several chemicals are available, including methyl bromide (converts to a gas, must be contained under a tarpaulin), Vapam and Dalapon (drenches). Such chemicals also eliminate soil insects and nematodes.

As yet, sterilization chemicals are risky for the inexperienced gardener. A foolproof, easily-handled procedure for home owners is needed to eliminate the intricacies of tarpaulin and the hazards of careless use.

Another trend anticipated is the improvement of residual soils rather than importation of expensive topsoil. This was discussed in the August, 1957, issue of HORTICULTURE, as was the advantage of a coarser grained seedbed (soils pulverized to dust slake upon watering).

Diminishing use of nurse grasses can be expected. Fast sprouting species, such as rye-grass and red-top, often included in seed mixtures to give quick, temporary cover, compete severely with the seedlings of quality turf grass. Mulching is a better substitute.

Importance of Mulches

The art of mulching is progressing rapidly, since many materials formerly considered waste are now being offered to the gardening public. Included, in addition to the usual sphagnum moss and straw, are such curiosities as pecan shells, buckwheat hulls, ground corncobs, tobacco stems, cocoa beans, woodchips, newspaper "slush" and many other materials. An entire booklet was recently devoted to mulches (*Plants and Gardens*, Spring, 1957, Brooklyn Botanic Garden). Many mulch materials are useful on a newly seeded lawn, where they serve to retain moisture, protect the soil against wash and in general serve the purpose of nurse grass without offering the competition.

Lawn seeds of the future may also show improvement. The quality of seeds was discussed in the February, 1957, issue of HORTICULTURE. Not all seeds of a given species are equally quick to sprout, nor do they provide equally vigorous seedlings. Research at Kimberdale has shown that the best blue-grass vigor coincides with the quality of the seed. Possible future specifications for seed may stress such "hidden" quality factors.

Specialty Herbicides

We can expect progressively more sophistication in lawn matters, just as in gardening generally. Fewer ill-kept, spotty lawns will be tolerated. Undoubtedly, there will be a greater demand for elimination of clover, for the sake of uniformity in lawn texture. This in turn would mean increased interest in specialty herbicides, such as 2, 4, 5-T.

There should be increasing use of the slow-acting fertilizers, based largely upon ureaform. All the kinks have not been worked out yet. At present prices, the cost of sufficient nitrogen for visible results may seem costly. But gradual release has advantages in many

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A rotary tiller makes the job easier

Crabgrass is easy to kill when young

Loosen soil before reseeding bare spots

Use a spreader for even distribution

Model glass flowers of the wild peach (Prunus persica)

Fabulous Glass Flowers

Estelle Mason

WHEN DR. CHARLES ELIOT WARE, class of 1834, Harvard University passed away, his wife and daughter established a memorial in his behalf. From 1887 to 1936, Leopold Blaschka and his son Rudolph of Dresden, Germany devoted their efforts to building a unique memorial to Dr. Ware. For over 50 years Louis C. Bierweiler, like a guardian angel, has cared for and cherished this memorial. Every year, nearly one quarter of a million people visit the Harvard University Botanical Museum, Cambridge, Massachusetts, to study and enjoy the Ware Collection of Blaschka glass models of flowers.

As I studied them, it was difficult to believe that they are made of glass, since they are exact replicas of nature. The duplication of minute anatomical details, the life-like color, and their beauty made me want to touch and smell the flowers.

The glass models represent many kinds of plants from the lowest fungi, mosses, and ferns, to the most complex seed-bearing trees. As I walked around from one display case to the next, I could follow the evolutionary sequence.

The specimens are of native, not cultivated plants, and almost all are from the western hemisphere. There are 847 species, illustrating 164 families of flowering plants, a selected group of cryptogams showing their complicated life-histories, rosaceous fruit such as strawberries, peaches, apples and pears, some showing the effects of fungus diseases, and a group of models portraying the relation of insects to the transference of pollen.

There are more than 3,000 models in all, since most exhibits contain enlarged cross-sections of the flower and fruit. The fig display, for example, has several fruit at various stages of development, a section of the seed magnified 90 times, a cross section of the flower ovary magnified 90 times, and four flower models at different stages of development.

The life cycle of the cryptogam is magnified 2,500 times in exact detail. This specimen clearly explains complicated structures that had been a mystery to me. A diseased pear has with it a greatly magnified model of the fungus which grows on it, and decays the fruit. The bees in the story of pollenization look so real that I could almost hear them buzzing.

Botanists had been sceptical that the buds and flower stamens and tiny details could be accurately formed in glass. In the *Botanical Gazette* of 1894, Mr. Walter Deane, a distinguished botanist, wrote: "I sought faithfully to find some error. But I failed to find such faults. There is such rigid observance of the very minutest features in every case that we can be absolutely sure that every model is an exact copy of the fresh specimen which the artist had in mind.

Angelica Tree'

"In the case of *Aralia spinosa* (commonly known as the Angelica tree or Hercules Club, growing as a low tree on river banks from New York to Missouri and the south west), the building up of the complex inflorescence, with its multitudinous minute flowers, is almost beyond belief. In this cluster, with flowers so small that their structure can only be seen with a lens, I counted of buds, blossoms and developing fruit, from 2,500 to 3,000. And yet every flower has its five petals, and five alternate stamens with long filaments. I sought to find on the under part of the cluster some flower perhaps less carefully done, but they were all equal in their perfection."

The entire display is the handwork of only two men, Leopold and Rudolph Blaschka of Dresden, Germany. Artisans in glass, they devoted almost 50 years to this labor of beauty, from 1887 to 1936 when Rudolph died at the age of 82.

Leopold, founder of the art of representing natural history objects in colored glass, was born May 27, 1822, at

Aicha, a town in northern Bohemia. He was the son of Joseph Blaschka, a merchant in electrical apparatus, and artificer in glass. Glass making was a tradition in his family, coming originally from Venice.

As a young man Leopold became a goldsmith, working mostly with the setting of precious stones. In 1853, he came to America on a sailing ship. To while away the long hours at sea, he made sketches of marine life. Later he took these sketches back to Germany. In 1865, he made his first glass models of Coelenterata, marine animals, for the Natural History Museum at Dresden.

Rudolph, his son, born in 1857 in Aicha, was educated at Dresden. Even as a little boy, he was interested in flowers and animals. His father was pleased and encouraged this love for nature.

The Blaschka glass models of marine life can be seen in many museums, but the glass models of plants and flowers are to be found only at Harvard. It was a specimen of marine life in glass which first caught the interest of Professor George Lincoln Goodale of Harvard University. Until this time students had only flat pictures or paper models of plants to study, neither of which had enough depth to be of much practical use. The glass model representing a form of marine life was so well made that Professor Goodale went to Germany to persuade the Blaschkas to try their hand at plants and flowers.

Father and son made many studies. They made sketches, prepared notes, and preserved specimens in alcohol to get accurate details. The glass was not blown as so many seem to think. They molded the glass while it was still hot.

The secret of glass flower making is not a lost art for there never was a secret. The Blaschkas worked with painstaking effort and patience to get accurate detail. They had a profound knowledge of glass and handled it with skill.

Leopold was once asked why he did not teach another besides his son Rudolph to help him. He answered, "When you can find me someone who has generations of artists working in glass behind him, and who will begin work at 10 years of age, and work 10 hours a day for 10 years, then I will teach him." No such person was ever found.

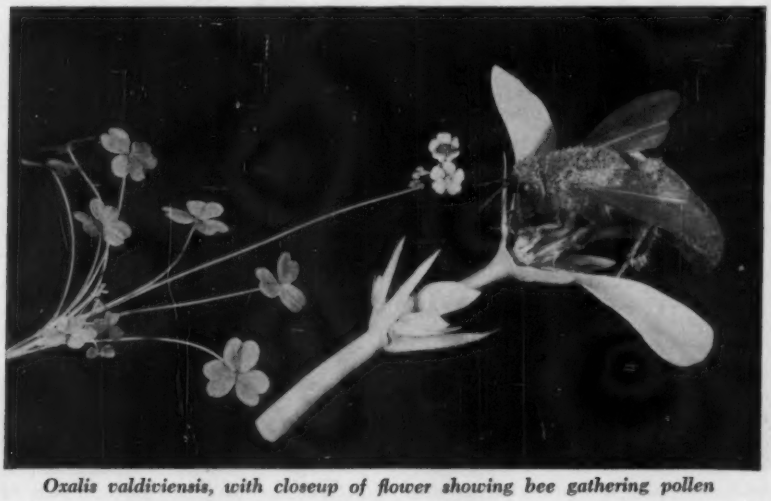
The flowers are made entirely of glass except a few of the larger structures which are reenforced internally by wire. The glass is so fragile that even vibrations cause it to shatter. Often the weight of a visitor leaning on the case is enough to break an exhibit.

If one is broken, Mr. Louis C. Bierweiler, caretaker and "glass doctor" for so many years, skillfully and lovingly puts the fragments together in such a way that no one can tell what was broken. He has been almost the only one to handle them. Almost as much an artist as the Blaschkas, a broken pine model was a particular challenge to him because of the difficulty of putting the slender needles back on the pine cone. From the way Mr. Bierweiler handles the glass flowers it is evident that he fully appreciates this priceless collection.

I moved enthusiastically from one display case to the next, examining each flower and fruit, until I came to a case displaying seeds and the methods of their dispersal. "Lady," said an attendant, "that case is real. Nature herself made those seeds." I had passed from the glass to the real without being aware of the difference—so real are the glass models of flowers at the Harvard Botanical Museum.

Begonia nelumbiifolia

Cypripedium insigne



Oxalis valdiviensis, with closeup of flower showing bee gathering pollen

Catalpa bignonioides

Ivanhoe, one of the newer varieties of blueberries, is noted for its fruitfulness. The plant was grown under a sawdust mulch, treated with iron chelate and pruned for greater productiveness

Plant Blueberries Now

Robert G. Hill, Jr., Wooster, Ohio

TODAY, MORE AND MORE home gardeners are finding pleasure in growing blueberries in their gardens. Once given the acid soil they need, blueberries are not difficult to grow, and offer many rewards in addition to the delicious berries they produce in the summer. These include showy white flowers in the spring, vivid scarlet-red foliage in the autumn and a picturesque habit of growth.

Actually, one of the most attractive of shrubs for the home garden is the native highbush blueberry (*Vaccinium corymbosum*), which can be used as a specimen plant, in the foundation planting or as a hedge. White or pinkish flowers in the spring, lustrous, dense green foliage, a crop of tasty berries, reddish-scarlet fall color and shiny, red twigs in the winter are some of the characteristics that make this shrub outstanding.

Highbush blueberry can be grown throughout a wide geographical area of the country. It is a deciduous shrub that must experience a cold period during the winter if it is to flourish, and generally speaking is adapted climatically to those areas where the apple can be grown successfully.

Among cultivated plants, the blueberry is relatively new. Until about 40 years ago, it was considered primarily a "wild crop". Since then, cultivated blueberries have become an important commercial and home garden crop. Widespread appeal has been stimulated by the development of superior varieties, which are better for their growth habit and more attractive, higher quality fruits.

Improved varieties, such as Earliblue, Berkeley, Coville and others, can be expected to produce sizable crops of berries the third or fourth season after planting for a period of 10 to 20 years. Mature, well-grown plants may be expected to yield 16 or more pints of fruit each year.

The culture of blueberries is relatively simple if plants are grown on soil naturally suited to their needs. The proper soil is relatively acid (pH 4.8 is considered optimum), high in organic matter, and well supplied with moisture. Unfortunately, few home gardens have this kind of soil, but with a little effort, blueberries will grow on most soils that have good drainage and are not too alkaline.

Planting time is in the early fall, as soon as dormant plants are available, or in the early spring. One- or two-year-old plants are best, and because of the ultimate size and long life of blueberries, space about five to six feet apart. If planning on several rows, allow 10 feet between the rows. Although it is not necessary to prepare the soil specially, it is beneficial to work in a small amount of sawdust or peat moss before setting out the plants.

Because of the nature of their root system take special care to set the plants at the proper depth, which is the same as in the nursery, never deeper. If set too deep, plants will not grow satisfactorily. Mulch as soon as they are set out with an organic material, applied to an area at least two feet in diameter around the base of each plant. In the row system, spread the mulch out along the rows.

To suppress weed growth make the mulch thick enough, and once it is established, continue to maintain it. This can best be done by adding more mulch each year, preferably in late fall.

A number of materials can be used as a mulch. Sawdust, one of the best, may be used either fresh or weathered from either hard or soft wood. Contrary to popular belief, sawdust has no marked effect upon the soil reaction, or pH, although the bacteria in the soil do use up the nitrogen so that it is advisable to add additional nitrogen. If sawdust is unavailable, marsh hay, straw, peat moss, ground corn cobs, buckwheat hulls, pine needles or any other similar organic material is satisfactory.

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Succeeding with Auriculas

Betty Jane Hayward, Scarborough, Maine

AURICULAS are old and familiar plants in Europe. In America, however, they have not been widely grown until very recently. When I first became interested in growing auriculas, nearly 30 years ago, it is doubtful if many, or indeed any, could be found in gardens in southern Maine. Now, they are grown and admired here and throughout the eastern states, while the northwest and Canada can claim many expert growers.

With a background of nearly four centuries of cultivation, the development of the auricula (known botanically as *Primula auricula*) in recorded history is impressive. The first hybrids were said to have been descendants of the alpine primrose (*P. auricula alpina*) and the gummy primrose (*P. hirsuta*), now restored to the correct older name of *P. rubra*. These types appeared in gardens in Austria in the latter part of the 16th century.

During the following centuries, color variations and forms increased in astonishing numbers. These are the ancestors of auriculas as they are known today. Their fascinating history is recorded in a number of books on the subject, two of which are, "The Primulas Of Europe" by John MacWatt and "The Auricula" by Sir Rowland Biffen, published by the Cambridge University Press in 1951.

My venture in growing auriculas began in 1926. The first plant was the sole product from a packet of seed from Switzerland. This old plant, which is a buff color of good form, has now grown into a colony, and is greatly prized, for it started me upon a delightful adventure.

Auriculas are not at all difficult to grow. Only patience is essential at first, since seedlings are slow to develop. After plants have reached blossoming size and are large enough to move into the garden, their requirements are comparatively simple. A well drained soil, with humus, a little lime and an occasional feeding of bonemeal will keep them happy. Divide the plants every three or four years, otherwise, they are apt to become crowded and develop smaller rosettes with fewer flowers.

I prepare my frames in autumn by adding a top layer of finely sifted soil. Then I make rows by pressing a strip of wood, the width of a lath across the frame, and sow seeds as soon as received. The rows will show even if the soil is frozen and the frame has been covered to keep the rain, as well as the cats and dogs, from causing any damage. Of course, a light dusting of soil over the seeds is necessary. In a gentle snowstorm, raise the cover and fill the frame to the top with the soft snow. Replace the cover, and all will be ready for the first warmth of spring to start the seeds into growth.

Seeds will start to germinate when the outside air is still chilly. Around mid-summer, when the little plants have developed several true leaves, transfer them to another frame or place where

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A section of the author's garden of auriculas with sempervivums and other rock plants set in the crevices

It's Tulip Planting Time

Order Your Favorite Varieties Early

The tall, late-flowering tulips are admired for their dignity and stateliness. To emphasize these qualities plant bulbs of one variety in large groups or clumps

One of the best ways to use tulips is along both sides of walk leading to your front door. After their colorful display has passed, they can be followed with annuals

EACH YEAR when spring rolls around, many home gardeners wish they had been more foresighted the previous fall, especially when they see a thoughtfully planned garden, gay with tulips.

Actually, you can plant tulips until the ground freezes, so why not plan to include them now in broad masses in the foreground of your shrub border or in neat clumps among your perennials. The low-growing species tulips seem to belong and show to the best advantage in the rock garden, although they may also be planted among ground covers in your foundation planting. Now is the time to check bulb catalogs to order your favorite kinds.

When you buy mixtures of tulips, you are never entirely certain of what you can expect. It is much more fun to plant the named varieties, grouping them according to color for the most harmonious combinations possible. If you select tulips from the various groups, starting with the species and following through to the showy Darwins and late double kinds, you can count on five to six weeks of bloom.

The lily-flowered tulips, with their pointed petals, are always intriguing. These are usually listed together with the cottage varieties. Some are marked with contrasting edges, which add greatly to their appearance.

Most gardeners are so familiar with the breeder, Darwin and triumph groups that little description is needed. These are the stately, long-stemmed, large-flowered forms that are often referred to as the May-flowering tulips. Their variety is legion.

If only for their curious appearance, the parrot types are intriguing. They are usually intense in color, and whether you prefer bright yellow or reddish black, warm purple or cherry red, there is a variety to suit your taste.

Enough cannot be said about planting tulips with an eye to the effects that they will have when in full flower. Underplantings of pansies, for-get-me-nots and English daisies make ideal companions for all kinds of tulips. Then, too, the way in which the colors are combined greatly enhances the pictures that they create in our spring gardens. So, let's plant tulips thoughtfully, and order them in lavish variety

During recent years double tulips (illustrated above), both the early flowering and the late blooming kinds, have come in for considerable attention. Many of the newer varieties have exceptionally sturdy stems and large, peony-like blooms, which last well when cut and endure heavy rain effectively.

Tulips planted on two levels with Azalea rosea make a pleasing effect

Gardening Under Artificial Light

Kennard S. Nelson, New York, New York

GROWING PLANTS IN THE HOME has its hazards and, among them, insufficient light is usually the most serious. It is hard to believe that most homes are too dark for plants—they seem to be so well lighted—but we fail to distinguish between light that is adequate for human needs as contrasted to plant needs.

Plants require a great deal of light and actually may gradually starve to death for lack of light in a place in the house that is perfectly lighted for our activities, such as reading or sewing.

The outdoor garden may receive over 10,000 foot candles of light during bright summer days, and experience has taught us that some plants produce the best growth and flowering only where they receive the maximum amount of sunlight. Yet other plants grow better in somewhat shaded locations.

The greenhouse grower, on the other hand, has better control over the light conditions for his plants. He can provide maximum lighting at all times for such plants as roses, carnations and chrysanthemums, while shade lovers, such as African violets, gloxinias, orchids and foliage plants, are given no more than 1,000 foot candles of light.

In the home, it is unusual to find more than 40 foot candles of light except in the immediate vicinity of a window that is free from obstructions. Typically, however, the sunlight is hindered by trees, nearby buildings, eave overhangs, blinds, shades, curtains or drapes, with the result that the "well lighted" window is actually fairly well shaded as far as plants are concerned.

In spite of these vast differences in light values between outdoor and indoor areas, plants can be grown successfully in the home. In general, kinds that flourish in shaded areas outdoors will do best indoors, provided temperature and moisture conditions are suitable. Only a few plants will thrive in dark areas, such as on inside walls, while most will grow better in the vicinity of windows or in other well lighted areas.

Research at the Ohio State University and the Ohio Agricultural Experiment Station has shown that excellent results in growing plants can be obtained indoors under fluorescent lights, without any sunlight whatsoever. This does not mean that fluorescent lights cannot be used to supplement natural lighting, but it does forcibly illustrate that some plants can be grown without sunlight. The practical applications of this research in the home are many.

In our homes, the lighting in the living area should be ornamental as well as functional. Very often the light must be attached somewhat high above the plants, resulting in insufficient light to produce active growth, though enough to maintain them in good condition. Since it is often more desirable to keep foliage plants in constant, slow growth, additional artificial light is advisable even though the source is some distance from the plants.

If you can devote a specific area for growing plants, an ideal indoor garden can be established in the home—in the basement or spare room—with fluorescent lamps as the sole source of light. Provide a uniform temperature of 65 to 70° F. and a convenient method for watering the plants.

The kind of light installation will be determined by the size of area you want to light and the kinds of plants you are interested in growing. You will need to light the area for about 18 hours each day, and for that African violets and foliage plants will need 500 foot candles of light.

To accomplish this, suspend two 40-watt industrial type fluorescent fixtures a foot above the tops of the plants. That provides uniform lighting to an area about 3 x 4 feet. To light a larger area, it is more economical to use single strip fluorescent fixtures mounted on plywood, painted with white enamel to increase light reflection. Gloxinias and orchids grow better with more light. To provide it, place the single strip fixtures closer together on the board and lower the lamps to within six inches of the leaves.

The indoor garden can be used for starting annuals for your outdoor garden. Garden plants require high light intensities, and about 1200 foot candles of light can be furnished if single strip fluorescent fixtures are placed about two inches apart on the reflector board, with the lamps kept within six inches of the leaves. Several qualities of fluorescent lamps are available, but the most satisfactory in the Ohio tests was the cool white fluorescent lamp.

If plant growth is slow, weak or spindly, it may indicate insufficient light, either not enough intensity or a too short lighting period. If you desire to test the amount of light being developed, contact customer service of your local light or power company to take foot candle readings for you.

When you have your fluorescent lighted indoor garden established in a spare room or the basement, the plants can be displayed periodically throughout the home and returned to the growing area later for rejuvenation. In a well lighted indoor garden, you can expect startling results.

A cabinet for plants complete with fluorescent lights and sliding glass doors

Use Green and White for Accent

Frances R. Williams

PLANTS WITH VARIEGATED FOLIAGE offer unusual possibilities in a garden. They may be used to create dramatic effects and are particularly valuable in shade or where flowers are scarce. However, there should be a reason for using plants with variegated markings, whether for accents, for borders with green and white as the motive, for ground covers or for the effect of intermittent light and shade.

My garden is damp, with high shade and some deep shade, and is planted almost entirely with perennials. In many cases, I have only a few of a kind, but enough to study their likes and dislikes. I feed them generously and use liberal amounts of compost. To provide for better air circulation, low growing plants are combined with those of higher growth. Contrasts in the shape of the leaves, such as large, flat leaves contrasted with finely cut leaves, is a feature for which I am continually striving.

As an accent in green and white, a large plant of *Hosta fortunei albo-marginata,* one of the tall-cluster plantain lilies, makes a superb mound of large, green leaves edged with a band of white. Its graceful mass of leaves will grow to three or four feet across in six years, depending on the amount of food and moisture available. Plants grow best in high shade. In the sun they become very ragged and the leaves turn yellow. All plantain lilies prefer some shade, but some take sun better than others.

Edged with Green

In the spring, *H. fortunei viridis marginata,* a tall-cluster plantain-lily, has lemon leaves with a green edge. These large, handsome leaves turn green later in the season. There is a variety, probably of *H. glauca,* with a gold or clear yellow edge, which is half an inch or more wide. This coloring remains all summer. A large, very striking plant, it needs a setting with other hostas, with large gray leaves or with fine-leaved plants, such as meadow-rue or ferns.

Another hosta, with a white edge in the leaf, in the middle-sized group, is the mid-summer plantain-lily (*H. erromena*), which is said to withstand abuse and sun better than the others, so that it is worth trying. I have had my plant but a short time.

A pleasant border along a path is created by using one of the narrow-leaved plantain lilies, *H. lancifolia albo-marginata.* The narrow leaves, with a white line along the edge, grow about eight inches high. The leaves of my plant remained in good condition, and green, through the hot summer of 1956.

Another hosta for a border is the attractive, low growing, blunt plantain-lily (*H. decorata*). Plants are characterized by their rounded leaves, with a border of white. They spread into clumps and perhaps are better suited to the end of a flower bed, as an interesting pattern in green and white. In the summer of 1956 the leaves of mine became torn and jagged. I think it was the heat that seemed to disintegrate them, for plants in the cooler part of my yard stood up better.

Plants Tend to Vary

Wavy-leaved plantain-lily (*H. undulata*) makes an attractive border plant. Its leaves have splashes of green and white. Plants from different places vary, with some having whiter markings than others. Toward the end of the summer, the leaves of this species will become greener, with darker green lines. A variety of the wavy-leaved plantain-lily (*H. undulata univittata*) also makes a good border plant, though it is larger. Its leaves are green, with a white stripe down the middle. This variety keeps its contrasting appearance all summer.

Both these wavy-leaved plantain-lilies may send out shoots that have large leaves of plain green, which, if cut out and replanted, will become huge plants. Three of my plants from different localities have acted this way, and I have seen it happen in several other gardens.

Oat-grass (*Arrhenatherum elatius tuberosum*) makes a delightful, low edging plant, with clear green and white leaves. It grows a little straggly but can be kept compact by clipping. Another grassy edging, about six inches high, is Japanese sweetflag (*Acorus gramineus pusillus*). Variegated, big, blue lily-turf (*Liriope muscari variegata*) will form a grassy edge about 10 inches high. With me it seems to be perfectly hardy.

Variegated wall rock cress (*Arabis albida variegata*) develops into a spreading specimen. It is an excellent green and white combination, needing sun and a dry location. Mine is merely tolerating its location, and I mulch it with sand.

There are several plants in green and white that can be used for ground covers. Spotted dead-nettle or cobbler's bench (*Lamium maculatum*), with dark green leaves, marked by a white stripe on the middle vein, and pink flowers, is most attractive. This form is more husky than the one with lighter green leaves and white flowers. Seedlings of both of these often have plain green leaves. If a plant of these with green and white leaves is moved into deep shade, it loses much of its white markings.

The variegated-leaved carpet bugle (*Ajuga reptans variegata*), with silvery veining, is cranky and seems to need some sheltered spot. Even then it may not like even that. Ribbon-grass (*Phalaris arundinacea picta*), a rather rampant ground cover, gets untidy, but looks fairly well and keeps more green and white in its leaves if it is cut back now and then.

Vinca minor aureo-variegata, a white flowering form, makes a good evergreen ground cover. In the spring and again in the fall the ends of the low, spreading shoots are a lovely gold.

Green and White Thymes

There are several thymes with green and white leaves, specked with gold. I have had a few of these, but they rot in my damp garden.

The lungworts make satisfactory eight to 10 inch ground covers, with their gay spring flowers. Common lungwort (*Pulmonaria officinalis*) has white spots on its leaves. More striking is Bethlehem lungwort (*P. saccharata*), with its prominent white spots and blue and pink flowers. *P. saccharata* Mrs. Moon has white markings, while the flowers are almost entirely pink, with very little blue. The leaves of lungworts come out early and look well even late in the fall.

Silver edge goutweed (*Aegopodium podograria variegatum*), which is growing in a damp place with ferns, shows a contrast in leaf shapes. It can be made into a wide edging by keeping the spreading roots cut with an edger. Fortunately it does not spread as much as the green form, which is a terrible pest.

Virginia water-leaf (*Hydrophyllum virginianum*) will grow in deep shade and spreads to make a covering about a foot high. In spring the leaves have cream colored markings.

Others with white markings on their leaves are British Columbia wild ginger (*Asarum caudatum*), Sierra wild ginger (*A. hartwegi*) and *A. shuttleworthi*. Their heart-shaped, shiny leaves are most pleasing. They are low plants, which grow in deep shade. A lily-of-the-valley (*Convallaria striata*), with a white line up the middle of the leaf, might become a ground cover, but mine did not survive and seemed to be a weak plant. Gill-over-the-ground (*Nepeta hederacea variegata*) has a creeping habit of growth that spreads around in gentle fashion. It is an excellent plant to put in window boxes and hanging baskets.

Variegated Japanese spurge (*Pachysandra terminalis variegata*) is an attractive evergreen of clear green and white. Mine happened to get started, years ago, among some English ivy. I was troubled at first, but both have grown well together. Give it plenty of compost and spray with an oil spray to prevent scale.

Plant for Effect

Variegated stonecrop (*Sedum kamtschaticum variegatum*) has yellowish tones and looks somewhat sickly. It looks better with a foil of gray nearby. If you can choose from a nursery an *Euonymus fortunei gracilis* with good coloring, not on the yellow side, you will have a low, shrubby evergreen cover that will be attractive.

Stripe-leaf Adams needle (*Yucca filamentosa variegata*) is another evergreen that, with space and food, will probably spread as well as the green species. Mine has not had such care.

Pineapple mint (*Mentha rotundifolia variegata*), with curly white-edged leaves, is an appealing plant. The flower stalk confuses the leaf pattern and can be cut off. This mint, not a rapid spreader, is not always hardy. Golden apple mint (*Mentha gentilis*) is entirely hardy and shows its golden markings on the lower leaves of young shoots in the spring. The leaves are delightfully fragrant, but the flower is not pleasant.

European meadow sweet (*Filipendula ulmaria*), with variegated leaves, has prominent white on its basal leaves, which form an attractive pattern against the soil of the flower bed. However, Japanese beetles are very fond of the leaves on the flower stalks.

Two stonecrops that may be obtained with variations that tend toward yellow coloring are a variegated form of the showy stonecrop (*Sedum spec-*

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Tall-cluster plaintain lily is noted for its large lemon-colored leaves that are margined with cool green

Pineapple mint, which has a delightful fragrance, makes an ideal ground cover in partially shaded locations

The green and yellow foliage of the variegated carpet bugle provides a striking contrast in front of ferns

This variegated evergreen euonymus makes a particularly pleasing green and white shrub for accent in shade where it provides a note of interest. Even during winter it attracts attention even more because it stands out sharply against the leafless plants

Silver edge goutweed forms a decorative carpet in the dense shade of this Norway maple where little else will grow. This adaptable ground cover also makes a good edging plant if kept within bounds

Dependable Perennials . . . for Easier Gardening

Mary Evans,
Bryn Mawr, Pennsylvania

IN THESE BUSY DAYS, home owners are interested in gardens that require a minimum of care. Whether gardeners know plants well or simply like to "grow things" the first step is to consider the planning, planting and upkeep. Otherwise it is easy to become involved in both.

It is important that the design and size of the garden conform to the style of the house. The proximity of neighboring buildings and property lines are also factors to consider when aiming for privacy or seclusion. If you look around, you will notice that some of the loveliest gardens are often found around the cottage doorways of smaller properties.

After determining the location and preparing the beds or borders in the proper manner, select plants that are suitable. A seasoned gardener knows that it pays to go to a reliable grower for healthy, well rooted plants that are true to form and color. New gardeners do not always realize this and often become victims of dealers who are trying to get rid of surplus stock.

The following perennials hold their own, season after season, through summer and winter. Not only do they grow easily and take care of themselves, but require only a little feeding in the spring or early summer.

Spring bulbs are largely a matter of preference, although among perennials they are not recommended, since their foliage turns yellow and brown before it can be removed. Crocuses are hard to manage in borders because the tiny bulbs often get tossed about when digging or cultivating the soil. With daffodils the leaves that must be allowed to ripen are unsightly in appearance.

On the other hand, daffodils and crocuses look lovely if naturalized in areas where they take care of themselves. Tulips lend themselves more easily to mixed borders, though like the crocus the bulbs may get dug up or cut in half by a spade. It is a task to lift the bulbs each spring after blooming and store them for replanting in the fall, but some use this method. Many others have success by leaving them in the ground for several years.

The following are some dependable perennials for gardeners whose time, energy and money are limited. Iris takes the lead. The dwarfs, such as *Iris cristata* and others, with their violet purple and yellow flowers peeping out of thick gray-green leaves, six to eight inches high, bloom in April and May. Taller varieties, which bloom later, may be planted in groups of three or more at intervals in the border. Or combine them with clumps of hardy candytuft, Siberian bugloss (*Anchusa myosotidiflora*) and blue forget-me-nots, which bloom at the same time. Some worthwhile iris varieties to try are:

Daylilies are among the most adaptable of perennials for flower borders. Plant them in broad masses for dramatic effects

Iris Varieties

Black Hawk—28", deep rich blue, early
Blue Zenith—40", light blue, late
Brown Thrasher—34", brilliant brown bronze, mid-season
California Gold—36", deep yellow, mid-season
China Maid—36", pink and gold, mid-season
Golden Majesty—36", deep golden yellow, late mid-season
Great Lakes—40", deep sky blue, late
Inspiration—36", deep red rose, mid-season
Ming Yellow—36", unusual yellow, late mid-season
Vestal Beauty—38", pure white, late
White Goddess—38", pure white, mid-season

Favorite Peonies

Peonies which follow iris are permanent plants that should be left undisturbed for many years. In late fall after the foliage has turned brown, is the time to move or divide large clumps. Feed liberally with bonemeal in the early fall and apply a balanced fertilizer in the early spring. Here are some peony varieties that rate high.

EARLY

Avalanche—large, pure white, edged crimson
Festiva Maxima—one of largest whites
Paeonia officinalis albo plena—double white
P. officinalis roseo-plena—earliest to bloom, deep rose pink
Richard Carvel—rich crimson, tall and very early

MID-SEASON

Auguste Dessert—deep pink, tall
Felix Crousse—old-time favorite, deep red, strong grower
Longfellow—brightest red, fragrant and tall
Reine Hortense—tall and hardy
Kelway's Queen—large double, deep rose-pink, fragrant strong grower

LATE

Cornelia Shaylor—large double rose
Enchantress—large creamy white, fragrant
Grandiflora—one of last Peonies to bloom, strong grower
La Fee—double, light pink

Dependable Daylilies

The daylily or hemerocallis is one of the easiest and most satisfactory perennials for a restricted garden, requiring very little care. Plants will grow in partial shade, but they bloom better in full sun. The clumps which grow rapidly need dividing every two or three years.

Before planting daylilies, consider the heights of the different kinds and keep tall varieties for the background of borders, plant medium kinds between phlox, iris and peonies and place the low varieties along the front with dwarf iris, candytuft and Anchusa.

The summer perennial border is replete when phlox comes into bloom

Some daylilies are evergreen through the winter season. If the foliage is cut back to the base in late summer new growth will replace it. With kinds which are not evergreen, remove leaves in the same manner in the fall.

Dividing daylilies is work that requires patience, muscles and a good spade. Avoid making too small divisions, since they need a year to develop into fair-sized clumps. The following daylilies are among the most outstanding.

Hemerocallis flava, one of the oldest, three feet, clear yellow, early bloomer.
Gold Dust, deep yellow, 2', free and early bloomer.
Caprice—2', rich brownish red, over-laid with yellow, early.
Baronet—2', russet red, June, flowering again in September.
Mikado—3', golden yellow, with red markings, June-August.
Fantasia—3½', overtones of red and yellow, June-July.
Dominion—3½', red, late June.
Bagdad—3', copper with yellow flush, June-July.
Manchu—3½', mingle of buff, peach and gold, June-July evergreen.
Sachem—3½', dark red and orange, fragrant, July-August, evergreen.
Ophir—4½', deep gold, July-August.
Patricia—2½', clear yellow, tinged green, July, evergreen.
Princess—2½', lemon yellow, July, evergreen.
Theron—2½', deep red gold overlaid with purple lustre, July-September.
Bijou—2', deep red, with gold overlay on yellow a small plant, June-August.
Circe—3½', light, clear, yellow, July-August.
Festival—3½', golden red and green, July-August.
Goldeni—3', deep gold, July, August, evergreen.
Hyperion—4', deep golden yellow, July, August.
Ming—4', deep golden yellow, fragrant, July-August.
Sudan—3', light yellow, fragrant, July-August, evergreen.
Vesta—2½', glistening yellow, fragrant, July-August.
Vulcan—2½', maroon overlaid with gold, July-August, evergreen.
August Pioneer—3', orange, mid-August-October.
Autumn Prince—3', light yellow, late August to frost, evergreen.
Autumn Red—3', red and gold, September-October.
Boutonniere—3', deep yellow, late August-October.
Midas—4', gold, tall and strong.
Multiflora—2', deep golden yellow, late August-October.

Phlox is another dependable perennial for the restricted garden. Its gay and glowing colors do much to enliven gardens from June through October, especially if the first blooms are cut off after they have faded.

Superior Phlox

Superior phlox varieties include:

Mary Louise, pure white, medium height, good foliage.
White Admiral, July-August, 2½'.
Miss Lingard, pure white, long lasting.
Daily Sketch—pale salmon with crimson eye, 3½'.
Rheinlander—deep salmon, strong stems
Miss Copyn—pink, strong stems
Painted Lady—peach 2½'.

Hardy Chrysanthemums

To complete the garden picture chrysanthemums cannot be overlooked. With many gardeners, hardiness is a problem, but plants are more apt to die because their shallow roots suffer from the effects of alternate freezing and thawing. Thus a winter mulch is necessary. Some gardeners even lift a small number of plants to winter in the coldframe. These are divided in the spring and later planted in the garden. Cuttings from the old clumps can also be rooted in light soil.

Some hardy varieties which bloom during late September and October include:

Mrs. P. I. duPont—soft salmon rose
Burgundy—deep crimson, double
Betty—deep pink, double
King Midas—golden yellow

A Greenhouse Made to Order

You Will Find It Illustrated in Color on Page 477

Thomas L. Hosmer, Escondido, California

WHEN THE TREKELLS bought their suburban home in 1941, they made certain that the lot was large enough to accommodate a small greenhouse, which could be attached to the house. Then they planned and dreamed about it for 13 years.

When the greenhouse was finally ready for construction, an architect was consulted. As a result, the new wing includes a pine paneled living room which links their home greenhouse with the main portion of the house.

The greenhouse is aluminum-framed, in four sections, 11 x 14 feet overall. Its arrangement indicates an immense amount of thought given to the final details by both the architect and the Trekells.

The door leading to the garden from the greenhouse is three feet wide, permitting the easy handling of regulation size flats, as well as a wheel barrow for handling soil and bringing in pots. These are conveniently stored so that guests do not see them from the pine room. A door, 28 inches wide, provides for easy access into the greenhouse from the pine room.

Actually, it is not necessary to enter the greenhouse to enjoy the flowers which flourish there, since a large plate glass window comprises most of the wall space connecting the two additions to the original house.

The center bench, which is 40 x 62 inches, carries the heaviest load in the production line. In June, this year, it contained tomato vines from which Mrs. Trekell snipped many a tomato for a quick salad. The plants were placed at a point nearest the outside door and farthest away from the great picture window. They were practically hidden by sweet pea vines in full bloom, while the too often naked lower stems were concealed by tall snapdragons. To complete the colorful picture, geraniums in full bloom were placed at the inside edge of the bench.

Geraniums seem to rate high in the affections of the Trekells. In fact, they have grown the variety Always, a light pink hortorum type bloom, with heads as much as four inches in diameter. They have a diversified collection of these showy plants, which includes a variegated Prince Rupert of the scented section, the dainty, pink, rosebud ivy geranium known as Sybal Holmes and the most unusual variegated-leaved ivy geranium of all, the variety formerly called Madame Margaret, but now

The greenhouse of Mr. and Mrs. Harold Trekell can be enjoyed from their living room

Mrs. Trekell at work in her small greenhouse

known as Alliance in the trade. In Lady Washingtons (*Pelargonium domesticum*) and the zonal group (*P. hortorum*) they aim to collect the best varieties obtainable.

Geraniums, by no means, take over the greenhouse, for as the seasons progress they have chrysanthemums, primroses, tuberous begonias, as well as other kinds of potted plants. Last winter and spring they had a passion vine in full bloom over a period of several weeks.

Although flowering plants predominate, there is always space for a seed flat and one for cuttings. In the corner next to the house, where it is well concealed from view, is a sink with a utility hose for watering. Above this sink, still practically out of sight, is a handy shelf for sprays, sprayer, labels and other materials. It is also placed so that it will not cast too much shadow on the growing plants.

In addition to the center bench, there are two side benches, 34 inches by 10 feet. The placement of the two doors provides a main aisle, 24 inches wide, while the one on the off side of the center bench is 18 inches wide. The aisles may seem to be small, but there is adequate room to move about even when several people enter the greenhouse at the same time.

The floor of the greenhouse is made of brick, with a bond pattern that is most pleasing to the eye. Of soft brick, it readily absorbs any surplus water and is not as hard on the feet as concrete.

The heating was easily handled, since it was connected to the steam heating system of the house. Forced circulation of hot water in the steam boiler passes through two-inch pipes placed under the benches. Additional radiation was secured by square fins placed along the pipes. The heat is thermostatically controlled each night at 52° F., and the additional cost during the winter averaged $7.00 per month over the previous cost before the greenhouse and pine room were added.

To secure shade in the summer and early fall months, redwood ⅞-inch slats, spaced $\frac{5}{16}$ of an inch apart, were used. In this way two-thirds of the overhead sunlight is eliminated. In addition, there were two ceiling ventilators. One opens automatically at 70° F. and the other is manual.

All these carefully thought out and engineered ideas enable the Trekells to have flowers all the year-round. Summer plants include tuberous begonias, gloxinias, geraniums, lantanas, as well as cucumbers and melons. The cucumbers and melons are grown upward on strings and then across the upper reaches of the greenhouse.

This opportunity to garden throughout the year has provided untold pleasure to Mr. and Mrs. Trekell and their friends. Fluorescent lights have been installed and these provide additional pleasure at night. The result is a continually changing picture which holds new interest with each passing day.

Geraniums are grown for color

Gray Birch is My Choice

IF YOU ARE LOOKING for a small tree, cheerier than most, consider the Gray birch (*Betula populifolia*). In a naturalistic setting or at the edge of your lawn, it has appeal throughout the seasons.

The grayish-white bark is striking against a background of evergreens, or reflected in a pool. Near the sunny side of a porch, a group of gray birches will diffuse the strong rays of the sun into a delightful and almost constantly moving pattern of light and shade.

Its shiny, translucent leaves are borne on slender, slightly twisted stems which quiver in the gentlest breeze. The graceful branches are bright terra cotta in color, and from these hang the green catkins, which will produce the next season's staminate flowers. The catkins are not especially noticeable until the golden autumn leaves have dropped. Then they lend their interest to the winter scene.

Gray birch seldom grows more than 35 feet high, with a trunk diameter of eight to 12 inches. Characteristic of this particular birch is that if it becomes too large, you can cut it down, and it will send out new shoots from the stump. Left undisturbed, these suckers will grow rapidly into clumps.

Bark Does Not Peel

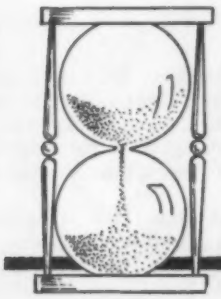
This graceful tree resists mutilation by the bark collectors, too. Its smooth white bark will not peel. One of the hardiest and least fussy of our native trees, it thrives in wet places or dry rocky uplands and in the most exposed locations. It roots deeply and does not harm grass growing under it.

The few insect enemies, as a rule, are not serious. The principle one is the birch leaf miner which is effectively controlled with lindane, applied at the rate of one pound of 25 per cent wettable powder in 100 gallons of water. For smaller quantities, use according to directions on the container. Spray when the small blisters on the leaves, are just beginning to be noticeable. A repeat spray in early July, for the second generation, is beneficial.

When purchasing these trees, try to choose only the smaller sizes, as large specimens, seven or more feet high, are difficult to move. For best results set out trees in the early spring, making certain to give them a thorough weekly watering.

For striking landscape effects, instead of a single stem, you can plant two or three trees in the same hole. Whatever your choice, with a little extra care at the start, this lively tree will reward you with years of ever-changing beauty.

—MARVIN H. GAGE



NOW IS THE TIME

WITH COOLER WEATHER this month, the garden takes on a lively look. Annuals are blooming hysterically, lawns are a glistening green, and chrysanthemums, the flower of the season, have burst into glorious reds, goldens, purples, oranges and whites. As the garden at the end of the day becomes rejuvenated by the cool of evening, so the fall of the year does the same for the growing season.

Much To Do

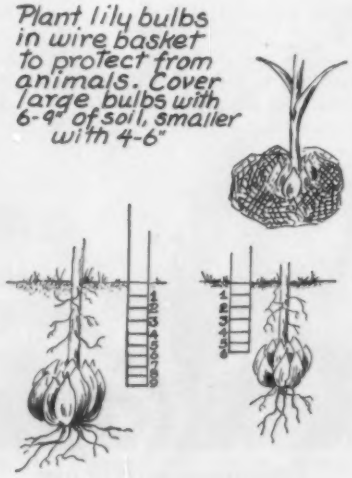
For many, September is a favorite month. Those who garden always enjoy it because there are certain rewards that the autumn brings. The month gives us a new incentive to dig and plant and even to plan. For in the garden one is always planning, whether it concerns design or deciding locations for the many Dutch flowering bulbs we will be planting. The trouble is that there is not enough space for all that we would like and often not enough energy and time to do all we would like.

But some new bulbs we must have. Among these are daffodils, which look best in clumps or drifts if they can be naturalized where they will not be disturbed. With daffodils, early planting is best in order to allow enough time for full root development.

Bulbs that are planted deeply, to eight or 10 inches, will not multiply rapidly to require dividing as often as those placed closer to the surface. When planting, use bonemeal in the soil, a fertilizer which benefits all kinds of bulbs for its high phosphorous content and non-caustic effects. Try some of the newer varieties or at least some that are new to you. They will give you twice the lift of the old-timers.

The Little Bulbs

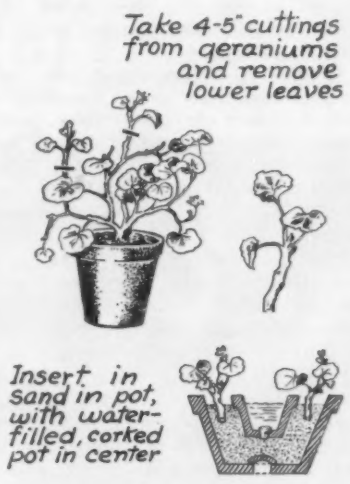
This month, too, is the time to buy and begin to plant some of the so-called species or miniature bulbs, including crocus, glory-of-the-snow, snowdrops, snowflakes, scillas and the not too common species tulips and daffodils. These represent the small wildings, as they are found growing in their native habitats around the Mediterranean world. They have many varieties as well which are usually larger flowered and different in color. Anyhow, they are small, dainty and delicate and utterly delightful for their exquisite forms.



September is also the start of fall clean up time. Pull out annuals that have finished flowering, though others, such as calendulas, stock and Heavenly Blue morning-glories are more profuse in their flowering. You will notice that the morning-glories will stay open all day in cool weather, just as they do on cloudy days earlier in the summer. Sometimes you find the same blooms still open on the following morning, while new buds do not open until noon, when the day warms up.

Response To Light

This matter of the response of flowers to temperature and light is an interesting one, and little mention is made to the flowers of waterlilies, which open with the sun, close when the sun leaves them, yet remain open all day when the weather is cloudy. These flowers are sensitive to the change of light intensity. Yet if light is uniform, without sun and shadow, they keep open all day long.

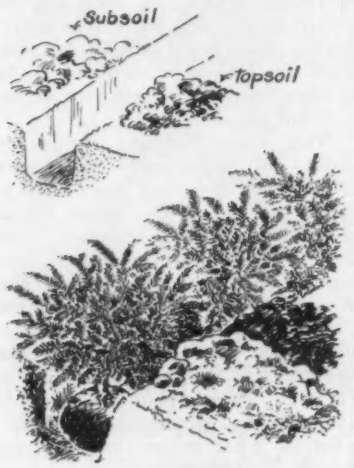


Bring In House Plants

It is always a good policy to bring house plants indoors early, not only to escape an early frost, but to give them a chance to adjust themselves to their new quarters before central heating is turned on. Moving day for house plants involves many tasks, such as washing pots, pinching, spraying when needed, repotting in some cases and even feeding. But to do it carefully will pay good dividends. Remember that they will pass many long months indoors, so that giving them right soil needs and fertilizer is very important.

To make new plants, you can take cuttings and root them in water or sand and peatmoss. From plants growing in the garden take pieces of favorite coleus, wax begonias, tradescantia, patient lucy and geraniums. Small annual seedlings, that came up volun-

tarily during the summer, will make charming house plants in sunny windows where it does get too hot. This includes dwarf marigolds, sweet alyssum, verbenas, portulaca, small petunias, annual phlox and lobelia.



To plant hedge of evergreens, dig trench. Be careful to keep balls of soil intact

Enjoy Chrysanthemums

The full beauty of chrysanthemums still lies ahead so give them some special attention now. First of all you can lift plants even when in bloom and move them to places in the garden where they can be enjoyed more fully. They do not mind this, because they lift easily, with soil clinging to their shallow root systems. Be certain, however, to keep them well watered and then to mulch them in the fall, because of all perennials, they winterkill the easiest. This is because their roots are close to the surface. Clumps of hardy asters can also be lifted carefully to help make more attractive sitting areas close to the house.

Start a New Lawn

Roses will continue to bloom for several weeks, so continue with the spraying. All kinds of needle evergreens may be planted and many kinds of shrubs and trees. Fertilize the lawn for the last time and sow seed in bare spots. Or start a new lawn, the best time of the year for this because of the cool, moist weather and reduced competition from weeds.

Remove stakes no longer needed, but stake other plants, just coming into flower, such as chrysanthemums and fall asters. Trim back extra long growth on shrubs and on vines such as bittersweet and wisteria. For bloom in cool greenhouses or cool plant rooms plant bulbs of oxalis, freesias, ranunculus and anemones. Plant a tree peony, pot up bulbs of calla lilies, divide overcrowded lily of the valley, get madonna lily bulbs into the ground immediately and gather gourds before a hard frost strikes them.

Enjoy your garden fully at this season. The days of autumn are glorious, filled with many wonderful things in the world of nature.

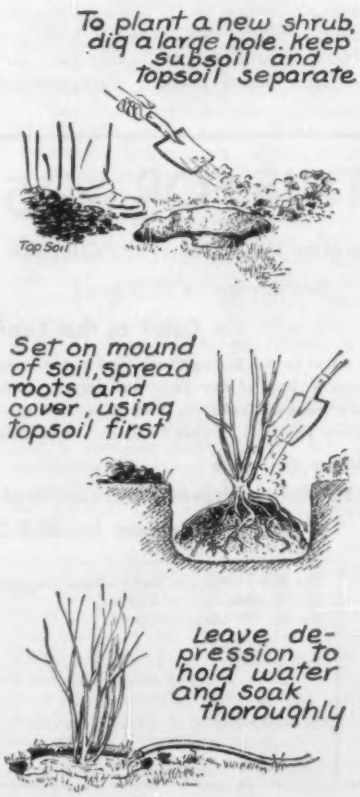
Dahlias are in their prime at this time, but do not be in a hurry to lift them until the frost has thoroughly blackened their foliage. Then they can be lifted, dried a few hours out of doors, cleaned and stored away for the winter in dry sand, peatmoss or garden soil. Be certain they are not put away moist or wet and that the packing medium is likewise not moist. If soil is moist, tubers may easily rot.

Divide Perennials

Among the perennials that can be lifted and divided are bearded iris, bleeding heart, Oriental poppies, daylilies and peonies. In fact for peonies this is the best time, because it allows them time to get well established and thus be able to flower well next season. Remember to plant the roots with the red eyes just an inch or two below the surface of the soil. Plant them too deep and they may not flower for years.

Peonies require a soil enriched with organic matter, old manure if available or dehydrated manure if not, along with bonemeal. Prepare the soil carefully and they will flower for years.

Plant New Shrubs



Rest-harrows

THE species of ononis (rest-harrows of gardens) which are hardy in northern Michigan are mostly desirable plants, not alone because of their ease of culture, but for their summer-flowering habit and pleasing colors. Most kinds should also be welcomed by gardeners in the United States because of their ability to get along on little moisture. Of the 70 or more species mentioned in literature, occurring naturally from the Canary islands, through the Mediterranean to northern Europe, not more than a dozen seem to be in commerce. Those from the Canaries and some from southern Europe, such as *O. aragonensis*, were not hardy in this northern Michigan garden. A few that were hardy were scarcely worthy of any gardener's attention. With one exception, *Ononis cenisia*, all mentioned are easily grown in any dry, sunny situation.

The prize of the genus, in my estimation, is *O. cenisia*. It is also the only one that could be called even fairly difficult to grow. Experience here shows that it cannot stand our longest rainless periods without some attention, though an occasional soaking will carry it along. Given good drainage, sunshine and moisture enough to keep it from being parched, it should keep going for years and put on an exhibition every summer to gladden the heart of its fortunate owner. The foot-long, or shorter, prostrate stems are clothed with pretty legume leaves. For a month or more, commencing usually by the middle of June, it decks itself out in a garment of bright pink pea flowers.

The next in order of preference, according to many experienced rest-harrow lovers, should be *O. hircina*, a 15-to 20-inch plant, with the general earmarks of the genus, including the characteristic pea flowers — this time with rose-pink wings and white keels. Its greatest value is a long blooming season, starting in May and continuing into August. The habit of so many rest-harrows of losing their bottom leaves during long periods of dry weather is especially noticeable in this plant. Although this tendency makes for unsightliness at times, it does not detract materially from the ultimate value of the species. In fact it is a splendid plant to group in sunny borders, especially if it is underplanted with annual alyssum or something of similar habit.

For garden appraisal three other hardy kinds, *O. fruticosa*, *O. rotundifolia* and *O. spinosa*, may be considered together, as they differ more in height of plant than in other characteristics. They all have the appearance of small shrubs, though all are herbaceous, at least this far North, and make annual growths a foot or two tall, according to kind, producing their bright rose-colored (whitish wings in *O. fruticosa*) in June and July. All are easily grown from seeds.

— C. W. WOOD
Copemish, Mich.

Camellias Are Hardier

Continued from page 445

camellias. I have seen plants in flower which were heavily covered with snow. Aside from a little shaking to lessen the weight on the branches, I did nothing else, and the plants continued to thrive. Snow seldom lasts long here, because of the salt air. However, prolonged freezing spells could bring harm, though our hot summer sun and wind is more dangerous. It is a continually recurring miracle to me that in spite of these conditions, which are truly foreign to camellias, they remain strong and vigorous.

Choice of varieties is an important matter that needs careful consideration. Yet more important is the health of the individual plant. Strong plants of many varieties flourish, while weak plants, regardless of their hardiness, fail.

For general success, Chandleri Elegans is my first choice. Plants are strong and vigorous, bloom profusely in mid-season and require little attention. This is an old established favorite that has a special class and award set aside for the best specimen at the annual show of the American Camellia Society. The color is a bright lively pink, and the incomplete double flower has a mass of small petaloids in the center showing stamens.

In Goshen, a town near Delaware Bay in Cape May County, Dr. and Mrs. N. A. Robbins have developed a surprisingly simple and successful way of growing camellias. What they did was to dig a pit, about five feet deep, 12 feet wide and 16 feet long. Three of the walls were made of concrete blocks, while the south wall was covered with glass, with a sliding door opening onto a ramp. The top was left open to the weather.

During periods of extreme cold, a tarpaulin, stretched across the top, protects the plants, and occasionally a light bulb is left burning for heat and air circulation. In the summer, pine boughs replace the tarpaulin and keep the direct rays of the sun off the plants. By this ingenious method, it is possible for these camellia enthusiasts to have out-of-door blooms from Thanksgiving and Christmas until Easter. Not only do Dr. and Mrs. Robbins grow the hardiest varieties, but they experiment with new kinds.

Among the varieties they have successfully grown are Arejishi, Herme, Debutante (a pure pink peony-like bloom, considered by many to be the loveliest of all) and Alba Plena, with its large, double white blooms. This variety, in spite of its slow and bushy growth, is well worth cultivating. The rich red Professor C. S. Sargent, Pink Perfection and Chandleri Elegans are other favorites.

In addition to these varieties of *Camellia japonica,* which thrive under this unique system, the Robbinses are growing *C. sasanqua* in rows, in the hope of developing a hedge. The growth habit of *C. sasanqua* is not as attractive as that of *C. japonica* but, in locations where the unopened buds are somewhat protected from the frost, the blooming plants make a distinguished and unique addition to a northern garden.

Pruning after the blooming season is possible, although I prefer to prune as I cut the blooms for indoor enjoyment. It is well to remember that once the tall central branch has been cut, the succeeding growth is likely to be lateral. Shaping plants is not difficult, but some bloom may have to be sacrificed. So far we have been completely free of diseases and insects.

Other spring-flowering shrubs, regardless of their individual beauty, have a short flowering season. By judicious planting in this region the camellia season may be extended. Varieties listed with respect to time of bloom must be adjusted to our calendar. Thus an early bloomer in the south becomes a spring bloomer here, and a mid-season variety may enter its blooming period in late April or May. Some years we have flowers opening in June. A simple burlap windbreak can help a plant to flower before the warm days force all the buds at once.

Penna. Federation Meeting

Dr. Walter H. Hodge, head of the education department at Longwood Gardens, Kennett Square, Pa., will be the banquet speaker at the 27th annual meeting of the Garden Club Federation of Pennsylvania to be held at the Sheraton Hotel in Philadelphia on Sept. 22-24. "Fifty Years of Plant Exploration" is the title of his lecture.

Also on the program will be Harry Wood of the Arthur Hoyt Scott Foundation at Swarthmore College, Swarthmore, Pa., whose talk, "Unusual Trees and Shrubs" will be demonstrated with specimens.

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Green and White for Accent

Continued from page 461

tabile variegatum) and blush stonecrop (*Sedum alboroseum variegatum*). These may be used for variety with other plants of the same height of a foot or more.

The first year's growth of the variegated form of dollar plant or honesty (*Lunaria annua*) is effective with its triangular leaves edged with white. Plants grow about a foot high. The second year, the lower leaves dry up more or less as the plant makes its stalk of flowers.

I used to grow the annual snow-on-the-mountain (*Euphorbia marginata*), with its showy green and white leaves. Because the juice of this plant causes dermatitis, I no longer grow it.

Some Low Kinds

I am trying some unusual low growing plants in my garden at present. They need a location where they will have surroundings that fit their daintiness. Apparently hardy, one is the silver-edge primrose (*Primula marginata*), which has white bits along the margins of its leaves. Others, European cyclamen (*Cyclamen europaeum*) and Neapolitan cyclamen (*C. neapolitanum*) have white veining. The fern (*Goringeanum pictum*) has fronds of a very attractive shape, silvered and about six inches high.

A shrub to be used for an accent or in a group of shrubs is the variegated tatarian dogwood (*Cornus alba argenteo-marginata*). The white edges of the leaves of this dogwood are clear and distinct, and the growth is attractive.

Some Taller Kinds

There are several variegated leaved plants of taller growth, with long, grass-shaped leaves, that are excellent to place with plants that have leaves of a different shape. About two feet high is sweet iris (*Iris pallida variegata*), with green and white leaves that, in my shaded bed, hold in good color all summer. Yellow flag (*I. pseudacorus variegata*) has cream color markings in the spring, which it loses later in the summer. There is also sweet flag (*Acorus calamus variegatus*), which I am recently trying. It looks as if it likes my damp and shaded beds, so stays green and white.

A variegated form of tawny daylily (*Hemerocallis fulva Kwanso variegata*) has leaves of green and white, but new shoots are apt to be plain green, so I cut them out. In full sun it seems to have more green shoots and will spread over a large area.

There are three eulalias, with slightly different markings. All are six feet tall and over a period of time will make large bushy growth. I have striped Japanese rush (*Miscanthus sinensis variegatus*), with a white midrib; Zebra-grass (*M. sinensis zebrinus*), with white or cream bands on the leaves; and maiden-grass (*M. sinensis gracillimus*). The plumes of the first two are buff color, while the third has plumes of a pinky buff, a trifle darker than the others and opening a little later. This third has leaves, long and very narrow, with a white line. It mounds over in a very graceful way.

All of these variegated plants blend into my planting. In addition there are many plants with gray leaves, which soften the effect, while a few with purple tones add variety.

The California Poppy

THE SPANIARDS called the California poppy Copa de Oro, cup of gold, and Dormidera after its habit to close at sundown, or on sunless days. They called the California coastline "La Tierra del Fuego"—land of fire or conflagration—for its seemingly limitless poppy fields that stretched mile upon flaming mile, swathes twenty miles long by ten wide, visible from forty miles away. No wonder that the sun-filled cup is California's state flower.

Since the Spaniards' day it has become a true cosmopolitan, at home in the gardens of Europe, Asia and Australia. But by luckless chance no plant has suffered such international "mixedupness."

The first European plant collector on the Pacific coast, Archibald Menzies, a Scotsman, gathered a withered flower in winter and mistook it for an English celandine. It fell to Chamisso, a botanist of French parentage raised in Germany, who sailed with the Russians' Kotzebue expedition to California in 1815, to classify and name the plant. For his fellow scientist on that expedition, Johann Friedrich Eschscoltz, Chamisso gave the poppy a botanical tongue-twister, *Eschscholtzia californica.*

Today, as wild flower population goes, the California poppy is still widespread, still a common sight though only torn fragments remain of those once limitless poppy fields, and a sailor sees now from the sea but a faint streak of fire across the hills.

"No painter has successfully portrayed the satiny sheen of its lustrous petals, no scientist has satisfactorily diagnosed the vagaries of its variations and adaptability" declares John Thomas Howell in his *Marin Flora*, adding: "In its abundance, this colorful plant should not be slighted: cherish it and be ever thankful that so rare a flower is common."

—JOAN PARRY DUTTON
Olympia, Washington

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Sissinghurst Gardens

Continued from page 449

and white delphiniums, and still more white eremurus set among silvery masses of artemisia (*Cineraria maritima*) and other grey leaved plants.

Lady Nicholson told us that she does little with annuals nowadays because they require so much work—early starting indoors, transplanting and re-transplanting. This surprised me somewhat because they are counted among the easiest of garden subjects here at home. But when I realized that different procedures are required in the cool English climate which lacks our hot, bright sun, I decided that I, too, would forego all but my most cherished annuals.

V. Sackville-West's study is over one of the gateways leading to this beautifully planted Tower Courtyard.

I was particularly fascinated by the herb garden with its thyme lawn adjacent to it, as well as the "sink gardens" which choice plants growing in old stone farmyard sinks which are placed in the courtyards. Another feature of this delightful garden in Kent is the unusual rock garden which the Nicholsons call "Delos" after the Greek island, and on which they are still working. The cottage garden is an utter delight with its charming mixture of early spring bulbs and perennials and roses climbing on the cottage walls. Perennials succeed the early flowers, blooming through the summer with a casualness that is not achieved, however, without careful planning. The colors, too, are carefully selected shades of yellows, oranges, and reds throughout the season—which brings me to what must be my final point.

The color effects at Sissinghurst are most appealing, for they are subtle and completely satisfying. Indeed, they come as a welcome change from the heavy, deep reds and yellows, the turgid rust-oranges, the "shotgun" or confetti color schemes encountered in most continental gardens and, all too frequently in English gardens, too. Here we found tender, soft pastels used with subtlety and authority, achieving harmonies which come only with a deep perception of the true properties of color.

Where intense colors are found, they are always placed with the proper amounts of paleness or softness of color in surrounding plantings. Such groupings produce color harmonies rather than the vulgar, garish effects inherent in the use of too many strong colors used together. In only one other garden in all of those I visited in England did I find color so knowingly, so enchantingly used. That was at Hidcote Manor, a garden which was conceived, planned and brought to completion by Major Johnston, who was, if I may wave the flag a bit, an American.

Mass. Garden Club Federation

At its 30th annual meeting, the Garden Club Federation of Mass. Inc. presented the following Awards of Merit: To Harold Bent, for years of assistance to the Horticultural Committee of the Federation; to John V. McManmon, for his cooperation and assistance with the Blue Star Memorial Highway project; to the Adams National Historic Site, Quincy, for conservation of the original plantings, dating back more than 150 years; to Waltham Field Station for its help and advice to home gardeners and garden clubs. Also a recipient of its Award of Merit was the Osterville Garden Club, in recognition of its outstanding Flower Show Achievement theme, "Design Through the Centuries".

The Mayflower Award was presented to the Northeastern District for its Flower Show held in cooperation with the North Shore Horticultural Society. The Red, White, and Blue Rosette of the National Council was awarded to the Weston Garden Club and the Country Gardeners of Weston for their flower show "Reflections of Freedom". The Arlington Garden Club received the Purple Ribbon award for their "June Pageant".

Officers elected for the coming year are: president, Mrs. Bernard G. Shohet, Chestnut Hill: 1st vice-president, Mrs. Philip W. Card, Marblehead; 2nd vice-president, Mrs. Allan R. Finlay, Wayland; recording secretary, Mrs. Elwood Schafer, Wenham; corresponding secretary, Mrs. Ralph A. Parker, Wayland; treasurer, Mrs. Henry B. Batchelor, Brookline.

Flower and Harvest Show

This year the Massachusetts Horticultural Society will again combine its annual Harvest and Chrysanthemum Shows into the Fall Flower and Harvest Show, to be held at Horticultural Hall, Boston, Oct. 17-20. Featured will be both hardy and greenhouse types of chrysanthemums, along with all kinds of fruits and vegetables. House plants, including African violets, will also be emphasized.

Rose Society Convention

The Chamberlin Hotel at Old Point Comfort, Va., will be the headquarters for the American Rose Society's 58th fall annual convention and rose show, Oct. 10-12.

The program, which has been planned by the Tidewater and the Virginia Peninsula Rose Societies, will feature E. M. Hall, Jr., who will discuss the nursery industry trade practices, Mrs. Edward Alexander, who will present new ways to use roses in Japan, and Dr. S. M. Emsweller, who will outline the research program being conducted by the American Rose Foundation.

Other speakers will include Dr. W. R. Jenkins, who will talk about nematodes and their control, C. James Faloon, who will bring the conventioners up to date on new pesticides, Alden Hopkins, who will describe the best ways to use early roses, and Frederic Heutte, who will give detailed information about new ways to propagate plants under mist. Growing roses from seed is the subject of C. H. Lewis' talk, while A. C. Barrett will demonstrate the pruning of climbing roses.

In addition to a J. Horace McFarland Award for the Society's Colonial District and numerous other prizes, amateur rose growers who exhibit in the rose show on Oct. 10 will be able to compete for the two of the top national awards offered by the society each year, the Milton S. Hershey Memorial Trophy and the J. Horace McFarland National Memorial Award.

Lily Society Meeting

The following officers of the North American Lily Society were elected at the 10th annual meeting held at Cornell University, Ithaca, N. Y. in July: president, Dr. E. F. Palmer, Vineland, Ontario, Canada; vice presidents George E. Holland, Toronto, Ontario, Canada, and William C. Horsford, Charlotte, Vt.; secretary, Mrs. William T. Mears, Anderson, Ind.; treasurer, Ernest F. Stokes, Lexington, Mass.

A special feature of the meeting was a display of new hybrid lilies from both Canada and the U. S., including yellow and pink trumpet lilies which emphasized the progress in lily development. The following special awards were made:

Isabella Preston Trophy for the best spike in the show to Jan de Graaff, Gresham, Ore., for an exhibit of Black Dragon, a new trumpet hybrid.

Directors' Cup to Jan de Graaff for a similar hybrid.

M. E. Pierce Trophy to Mrs. Douglas Keith, Vermilion-on-the-Lake, Ohio, for a collection of native American lilies.

Silver Medal of the Massachusetts Horticultural Society and Bronze Medal of the Toronto Horticultural Society to George Holland, Toronto, Ontario, Canada, for an exhibit of the variety Viking.

Second Bronze Medal of the Toronto Horticultural Society to George Holland for his Rose Queen.

D. W. Griffiths Cup to Dr. E. F. Palmer, Vineland, Ontario, Canada, for the best unnamed seedling.

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Horticulture's Garden Club Yearbook Competition

HORTICULTURE offers a first prize of $35 for the best 1956-57 yearbook submitted by a garden club. It offers a second prize of $25, a third prize of $15 and six additional prizes of $10 each. This competition is restricted to individual clubs. It does not apply to federations. The judges will consider each yearbook submitted from all angles. Garden clubs which received prizes in 1956 will not be permitted to make entries in the 1957 Competition. Yearbooks to be entered in this competition must reach the office of HORTICULTURE, 300 Massachusetts Avenue, Boston 15, Massachusetts, on or before October 15, 1957.

Special Awards for Club Projects

IN ADDITION to the prizes listed above, 6 additional awards of $5.00 each will be presented to Garden Clubs who have launched or completed one or more outstanding or unusual club projects during the year. Awards will be made on the basis of projects as presented in the Yearbook. Please do not submit letters of explanation.

Scale of Points for Judging Yearbooks

1. Standard Club.....25

A. An active organization (size unimportant).

B. Systematic course of study.

C. One flower show a year (at least).

D. One garden pilgrimage or visit.

E. A club project (at least one).

F. Authoritative speaker for at least one meeting.

2. Utility of program.....40

Principle: A garden club is of value only in proportion to the work it accomplishes for its community and for its members.

A. At least one major project. (Small clubs cannot be expected to have more than one project, but larger clubs should have several. Horticulture, conservation, landscaping, civic development, shade-tree planting on streets or in parks, reforestation, are typical suggestions. It is the quality of the work undertaken rather than the subject that is important.)

B. Evidence of progress in the project chosen and in all the club's activities may be covered in the President's annual report or those of committees.

3. Contents 25

A. Complete identification (name of club, town and state).

B. Complete membership lists with addresses.

C. Complete program (meetings, projects, visits, accomplishments).

D. Supplementary material of value to members in gardening.

4. Form of Yearbook.....10

(Size of club will have no weight in determining quality of yearbook.)

A. Neatness and beauty of design.

B. Originality in relation to club's character.

C. Quality of reporting and comprehensiveness of coverage.

D. No restriction as to printing, mimeographing and other forms.

E. Scrapbooks not considered yearbooks.

F. Although no distinction will be made, the size considered ideal is about 5 by 7 inches or less.

Boston School of Flower Arrangement

The Boston School of Flower Arrangement will begin the autumn term of its 18th year on September 10, 1957, at Horticultural Hall, under the direction of Mrs. Arthur P. Teele. Other all day meetings, 11 A.M. to 1 P.M., and 1.30 P.M. to 3.30 P.M., include September 24; October 8 and 24; November 12 and 19; and December 10 and 17.

Instruction in the handling of plant material, both fresh cut and dried, to produce design, will be given all day by Mrs. Teele. Holiday decorations for home and church are part of the curriculum. At 2.30 P.M. written questions submitted by pupils will be answered by the Director and discussed by the class.

These classes, open to anyone interested, are free to members of the Massachusetts Horticultural Society who must show their membership cards at the door. Non-members pay a registration fee.

For additional information write or telephone the Director, Mrs. Arthur P. Teele, 168 Dartmouth St., Boston. Telephone: TRowbridge 6-7164.

COMING EVENTS

Sept. 5. Worcester, Mass. Dahlia Show, Worcester Horticultural Soc., Horticultural Hall, 30 Elm St.

Sept. 5-6. Mansfield, Ohio. Meeting, American Iris Soc., Region 6, Kingwood Center, 900 Park Ave. West.

Sept. 10-11. Mansfield, Ohio. Flower Show, Linnaeus Garden Club of Mansfield, Kingwood Center, 900 Park Ave. West.

Sept. 11. Russell Point, Ohio. Flower Show, Indian Lake Garden Club, Community Club House.

Sept. 13-15. Asbury Park, N. J. Flower Show, Monmouth & Elberon Horticultural Soc. & the City of Asbury Park, Convention Hall.

Sept. 13-15. Asbury Park, N. J. African Violet Show, N. J. Council of African Violet Clubs, in conjunction with Monmouth & Elberon Horticultural Soc. Show, Convention Hall.

Sept. 14-15. Wayne, Penna. Flower Show, Community Garden Club of Wayne & 13 Main Line Garden Clubs, Radnor High School Gymnasium.

Sept. 14-15. Mansfield, Ohio. Harvest Show, Men's Garden Club, Kingwood Center, 900 Park Ave. West.

Sept. 19-20. Doylestown, Penna. Flower Show, Doylestown Nature Club, Presbyterian Educational Bldg.

Sept. 19-23. Honolulu, Hawaii. Second World Orchid Conference & Show, American Orchid Soc., Univ. of Hawaii & Hawaiian Orchid Societies, Honolulu Academy of Arts.

Sept. 21-22. South Carver, Mass. Cranberry Festival, Edaville.

Sept. 21-22. Falls Church, Va. Annual Flower and Garden Show, Falls Church Garden Club, George Mason Jr.-Sr. High School, W. Broad at Haycock Rd.

Sept. 21-22. Akron, Ohio. Rose Show & Conference, Am. Rose Soc. of Buckeye District, Akron Rose Soc., Goodyear Rose Soc. & Ohio Rose Societies, Portage Hotel, Corner Main & Markets Sts.

Sept. 22-24. Philadelphia. 27th Annual Meeting, Garden Club Federation of Pennsylvania, Sheraton Hotel.

Oct. Mansfield, Ohio. Chrysanthemum Garden Display, Kingwood Center, 900 Park Ave. West.

Oct. 3. *Worcester, Mass.* Harvest Show, Worcester Horticultural Soc., Horticultural Hall, 30 Elm St.

Oct. 10-12. Old Point Comfort, Va. Meeting, American Rose Soc. & the Virginia-Peninsula & Tidewater Rose Societies, Hotel Chamberlin.

Oct. 16-18. Philadelphia. Flower Show School, Course III, Garden Club Fed. of Penna., District 1, Strawbridge & Clothier Auditorium, 8th & Market Sts.

Oct. 23-25. Denver, Colorado. 12th Annual American Horticultural Congress, Albany Hotel.

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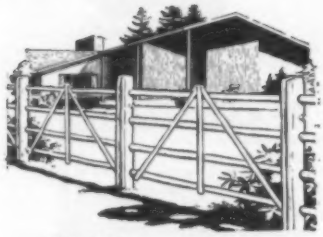

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For Better Lawns

Continued from page 453

areas, compared to the feast-famine results from soluble nitrogen.

In addition to the development of more specific and selective weed killers, we should expect improvements in pre-emergent herbicides (those applied early in the season before the weeds start). The care needed in timing and application has thus far limited their usefulness. Several possibilities exist for chemicals sprayed or spread once or twice during the season. These prevent the establishment of crab-grass, chickweed, goose-grass and other annual species. Alanap, certain urea derivatives, special forms of 2, 4-D and arsenical soil treatments have already proven effective.

Lawns may be brown in certain seasons because of diseases. No one can expect the home owner to identify diseases. Even the experts have difficulty here. Yet general-purpose fungicides, containing a blend of ingredients to control most of the common lawn ills, are coming to the forefront. Meticulous lawn keepers will probably apply fungicides routinely as prophylaxis. Once trouble has struck, little can be done except to check spread. Of course, disease will vary with the kind of grass, the region and the season. Ordinarily, treatment need be made only occasionally, during seasons of likely attack.

Research on Feeding

Grass conditions may foster resistance or susceptibility to disease. Certainly, in mid-latitudes, soft, lush growth in summer is apt to be victimized more than grass that is less fertilized. Research studies can expect to pinpoint more exactly the timing and rates of fertilization most suitable under the prevailing climatic conditions.

Trends in watering are hard to predict. At the moment, there is a flux of conflicting factors, with greater demand for water offset by diminishing supplies and limited distribution facilities. Certain areas of light rainfall must have water if a lawn is to survive. In more humid regions, home owners may prefer to put up with off-color lawns in mid-summer, rather than undertake the expense of watering. Fortunately, good grass, fully established, is seldom killed for lack of water, and should bounce back with the first autumn rains.

Increasing convenience from sprinkling devices can also be expected. Sprinklers of improved capacity, able to achieve uniform coverage and capable of shutting themselves off are already on the market. In many arid areas, such as Los Angeles, it is almost axiomatic, in the building of lawns, to lay an underground sprinkling system. Underground systems, properly fitted, can uniformly water the lawn.

Another convenience we can expect is combinations of lawn materials. Already, weed killers are combined with fertilizers and insecticides, or fungicides, with weed killers. This trend should continue, so that eventually a few timely applications will take care of lawn needs (aside from mowing).

New Reel-type Mower

The trend in lawn making, as in everything else, is towards mechanization and labor-saving devices. Mower trends were discussed in the May, 1957, issue of HORTICULTURE. An idea that may encourage a comback for the reel mower is being advanced by a leading manufacturer. An extruded aluminum reel (less costly than hand forged steel types), coated with an abrasive, is experimentally in use on a number of mowers. When set slightly closer to the bedknife, the soft aluminum wears quickly to a new sharp edge in perfect adjustment. The unit in use at Kimberdale has given highly satisfactory service, although it has not been in use long enough to evaluate its durability.

The aluminum reel has eight blades. We can expect a trend to more blades on all reel mowers, providing greater perfection of cut. This is especially needed with Zoysias, Bermudas and bents. The old five-blade reel will probably soon be replaced by six-blades on conventional mowers and even more by types like the extruded aluminum.

Probably the reason lawn mowing has been the butt of so many jokes, is that the average home is undersized and underpowered in lawn equipment. There will always be the restriction of budget, but I look for the home of tomorrow to have equipment capable of mowing the lawn conveniently in the daylight remaining after supper. This will make mowing a pleasure.

Using Aerators

As improved maintenance comes, grasses may grow so well that they will begin to smother themselves. When a thick mat of vegetation builds up, so that water cannot seep through and new sprouts are hard pressed, removal of the thatch becomes desirable. A cure that most home owners do not relish is vigorous raking. Developed in recent years, to do the job mechanically, are devices for punching holes through sod (aerifying) or ripping matted grass (vertical mowing). Fast-growing grasses with runners, such as bent-grasses in the north and Bermuda grasses in the south, are likely candidates for treatment. Machines are often available through landscape and nursery houses.

Numerous trimmers, edgers and power sprayers are currently available. Some enterprising firms make a powered handle, which can attach to all of these devices, as well as mowers and tillers. We can anticipate added use of such mechanical helps to take drudgery out of "nuisance jobs".

Another asset, too, is the development of siphon attachments for the garden hose, which permit exact metering of herbicides, fungicides and insecticides, as well as certain soluble and semi-soluble soil treatments (fertilizer concentrates). Doubtless, more and more home owners will come to appreciate the convenience and trivial storage problems of hose-siphon spray guns.

There has been a flurry of excitement about gibberellic acid, a recently developed growth stimulant. Actually there seems little use for this material on lawns. It has proven ineffective in speeding seed sprouting, although it will encourage later growth and perhaps better rooting of planted sprigs.

Quicker Growth

Not enough is known, yet, to evaluate it completely. There may be certain instances where accelerated growth is desired, such as in getting a lawn ready for an important occasion or in spurring recovery from unexpected frost on summer grasses. Some gardeners might want to stimulate late blue-grass in an attempt for early winter greenness. For the most part, home owners are not interested in promoting faster grass growth than normally occurs with adequate watering and feeding. In fact, there is still interest in inhibiting the growth of grass (through maleic hydrazide), although home garden use has been unsatisfactory due to spotty results, damage to grass and the encouragement of weeds when the grass is repressed.

I believe we shall see an increasing tendency to regard the lawn as an integral part of the home. Certainly modern landscaping calls for the use of lawn areas for more extensive outdoor living. Picture windows highlight sweeps of lawn. These trends should continue, since they are soundly planned for enjoyable living.

At the same time, there may be an increasing interest in the lawn for its own sake—an enlightening miniature world of grasses and weeds. Our hectic modern pace makes solace, formerly derived from solitude and understanding, even more needed. To understand better the scheme of life, the interplay of living things with their environment and the seasonal responses and adjustments, where, closer at hand, can we find instruction than outside our front door on the lawn?

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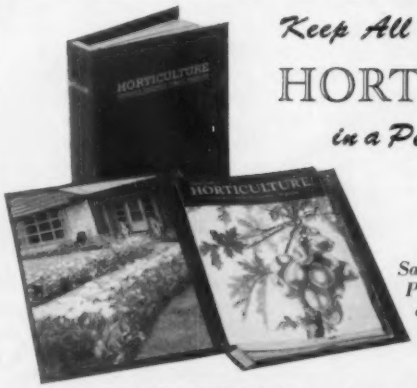

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The First Three Months...

In My New Greenhouse

Helen H. Arnold, West Roxbury, Massachusetts

SHALL I or shall I not have a greenhouse? This question, teasing its way back and forth through my thoughts over a period of many months, suddenly resolved itself. I would have a greenhouse I thought, and decided on an aluminum lean-to type, seven by 14 feet, with an outside door at one end. Operated as a cool house (50° F. at night and about 65° during the day), it has two vents running the length of the house, one manual and one automatic, to provide the proper ventilation.

Fortunately, our choice of location, facing southwest with early morning sun, proved a good exposure. The greenhouse, we felt, should be attached to the house for full enjoyment, where it would be easily accessible, day or night. Could I have foreseen to what depth the mercury would drop in January, I would have been firmer on this point.

Easily Accessible

By happy chance, we decided on a spot outside our living room, where a window would be replaced by French doors opening into the center of the greenhouse. Here it was possible to produce an attractive drop in level. The floor of the greenhouse would be filled to within one foot below the sill of the French door. A tile step, six inches deep, four and one half feet long and 19 inches wide, would make a solid and pleasing entrance, with another six inches up into the living-room.

Ground was broken on October 1st, and construction was completed on November 4th. I shall not forget that morning. Pale winter sunshine streamed through the glass, dappled by branches of hickory and copper beech which later, in spring and summer, promised welcome shade.

The first step was to build the benches. These were designed to run on three sides, with a six-inch section at the front. Backed with redwood, when packed with soil, they were intended for hanging vines. Also, at the eastern end, a section, 18 by 44 inches, was divided off and filled with potting mixture for seedlings and other plants.

After the benches were completed, I spread an inch layer of stone dust, obtained from a quarry. This was topped with an inch of Michigan peat, which makes for good drainage and is, I think, more becoming to plants than cold, grey pebbles. Since the area under the bench is apt to become an eyesore, I took care to space upright supports so that the view from the house was not obstructed.

After placing stone and gravel fill on the ground, I spread a thick carpet of pine needles, using those of the umbrella pine (*Sciadopitys verticillata*), because they are larger and redder than those of white pine. In the center, and resting on the pine needles, I placed the bowl of a large bird bath. This, kept filled with water, holds long sprays of ivy. On either side of the bird bath are potted ferns.

For many weeks I had been caring for some 200 plants, of all sizes, which were crowded into every available place in the house. I scrubbed all the pots, sprayed the plants against possible insect pests and then dunked them in a weak solution of liquid fertilizer to give them a boost.

During my first year, I decided not to be too ambitious, but to start with perennials and annuals, including petunias, foxgloves, lupines, nicotianas and others taken from the garden. Bulbs of various kinds had been potted and were rooting in a cool, dark corner of the cellar.

Unusual Plants

Soon I added night-blooming jasmine (*Nyctanthes arbor-tristis*), stephanotis, bitter-root lewisia (*Lewisia rediviva*), coral ardisia (*Ardisia crispa*), yellow flax (*Reinwardtia indica*), an enchanting greenhouse plant, with its clear yellow flowers, and the exquisite atamasco or zephyr lily (*Zephyranthes atamasco*). Several varieties of ivies and the cascading Italian bell-flower (*Campanula isophylla*) soon made the border look long-established.

In addition, there were numerous rooted cuttings from my plastic-covered "greenhouse" propagating unit, such as common or English boxwood (*Buxus sempervirens*), *Ilex crenata latifolia* and others, tucked in where space allowed. Many well-rooted cuttings of dawn redwood (*Metasequoia glyptostroboides*), taken from our own tree, were brought in, while large pots of chrysanthemums, provided plenty of riotous color from the beginning.

In this small space, a potting bench and work area are impractical. Fortunately, in our rambling Victorian house, a convenient room was easily taken over for this. Stacked against the wall are large tins labeled "Basic Potting Mix", "Sifted Loam", "Peat Moss", "Leaf Mold", "Fibrous Loam", "Sphagnum", "Sand" and "Broken Crock". A wall cabinet, cleared of laundry equipment, is used for plant foods, sprays, labels and other necessary materials.

From the first, I had been aware that there was not a single place in the greenhouse for hooks or pegs for hanging plants. To solve this problem, I put up a shelf at either end, but not across the length, as this would cut the light from the plants below.

More Space

To take care of the long side of the greenhouse, I acquired six aluminum strips, like those used to edge kitchen counters, and fastened them at intervals along the length of the greenhouse. To secure them, I simply slipped one end of each strip and curved the strip down to where the other end was nailed to the bench. Then a strong, green-covered wire was stretched along the length by fastening it, at both ends, to a shelf and to the top of each aluminum strip.

Soon a whole string of little two and three-inch pots of fuchsias, ivy geraniums, passion vines and other plants were gaily dangling in the full sun. These, of course, need more frequent watering than those that rest on damp peat, but they seem to thrive on their hanging trapese. Cup hooks, screwed under the eastern shelf, accommodate a dozen more of the small pots, making the most of the early sunshine. Wire hangers for these are easily made, and the plants can be shifted, if need be, from place to place.

Turn to page 483

Helen H. Arnold's home greenhouse shows what she accomplished in a period of three months

Enjoy a Home Greenhouse

Mr. and Mrs. Harold Trekell enjoy their home greenhouse from their living room

African Violets Hold the Spotlight

OF ALL THE TENDER PLANTS cultivated indoors, few can rival the African violet in popularity. In fact, no other flowering plant in recent times has excited so much comment as this native of the Usambara region of East Africa. In less than a generation, African violet clubs have been formed in all parts of the country, most of which are affiliated with the African Violet Society of America. This active organization now has more than fifteen thousand members.

Shortly before the turn of the century, the imperial district governor of Usambara, East Africa, sent seed to his father, Baron Walter von St. Paul-Illaire, in Germany. Some plants were shown to the director of the Royal Botanic Garden at Herrenhausen, and soon they were found in many European botanic gardens. Appropriately enough, the generic name, *Saintpaulia,* commemorates the family that distributed and introduced this extraordinary plant. The species name, *ionantha,* is derived from the Greek, which means flowers like a violet—hence, the common name African violet.

For many years, these plants were found in the greenhouses of collectors, where only a few varieties were grown. It remained for an enterprising California firm, Armacost and Royston, to launch some of the first varieties known in this country. Since that time, varieties have increased by the hundreds. Today even the most ambitious amateur can only hope to grow a comparatively small number of the amazing list of varieties that are propagated.

Since many variations have appeared through hybridizing, the flowers have increased in size and improved in form and color, so that African violets are widely cherished as house plants. Thriving in subdued light, they respond readily to care and, therefore, appeal to indoor gardeners throughout the country.

My Way with African Violets

William B. Carter, President, African Violet Society of America

As PRESIDENT of the African Violet Society of America, I am often asked to offer my secrets for success. Actually, I have no secret formulas, since the African violet is one of the easiest of all house plants to grow with success. Its widespread popularity among indoor gardeners all over the country is proof enough.

To answer the many questions about culture, the three basic needs of African violets are proper temperature, light and moisture. Coming originally from the tropical areas of Africa, the African violet is a warm weather plant which enjoys a day temperature of 70 to 75° F. and a night reading that does not go below 60° F. The fact that it likes heat indicates why it thrives in the warm, often overheated, rooms of our homes.

In order to get good bloom, some direct sunlight is necessary. Although plants can be grown successfully in north windows, they do not flower as much as they do in exposures that provide some sun during part of the day. During the winter months, pots may be kept at south windows, but as the sun gets hotter in March, place them behind a thin curtain or move them to other windows where they will receive less sun. To keep plants symmetrical and prevent one-sidedness, turn pots around periodically.

Three Important Needs

There are three points about watering to keep in mind. One is to keep plants moderately moist, but to be careful not to overwater. Another is to use lukewarm water and not water that is cold or hot. A third is not to allow pots to stand in water. This can easily be avoided by resting them on pebbles placed in the saucers.

In spite of popular opinion, watering from the bottom is not necessary. It is better, in fact, to water from the top, because the water washes the salts, which come from the fertilizer, down into the soil. This prevents them from collecting at the top. Wetting the leaves is not harmful; actually it is beneficial because dust is removed. As long as the water is lukewarm, the leaves will not become spotted, even if plants dry in sun that is not too hot.

As for soil, the simplest and best way is to buy soil that is already prepared. Not only does it have the proper fertilizer content, but it is clean and free from diseases and pests. Those who prefer to mix their own can start with a good sandy loam and add to it one-third peatmoss and one tablespoon bonemeal to each five-inch pot of soil mixture. Soil may be sterilized with boiling water or by baking, but electric sterilizers are recommended for those who grow African violets in large quantities.

Of the various methods of propagation, making new plants from leaf cuttings is the simplest. These can be taken any time, and for best results, dip the ends of the stems in hormodin powder #1 and insert in a mixture of sand and sawdust, or sand and peat-moss, vermiculite, perlite or even light soil. Rooting the cuttings in water is another common method among window gardeners.

The group of African violets illustrated opposite was photographed to reveal the dramatically symmetrical form of plants grown to perfection. The richly textured foliage serves as foil for the flowers which radiate to create a fascinating pattern

Once the leaf cuttings are rooted, plant them in 2¼" pots, using the specially prepared soil. I always use plastic pots because they are clean, light, attractive and durable. The soil in them also does not dry out as fast. When the young plants develop and fill out the pots, shift to three-inch pots and eventually to four-inch pots, but never anything larger. Overpotting can be harmful because soil does not dry out quickly enough. When potting, I do not place anything at the bottoms of the pots. If the soil is light and porous, drainage will be good.

Double-flowered varieties are rapidly becoming popular with many African violet enthusiasts in the country

In addition to making new plants from leaf cuttings, it is possible to divide plants that have two or more crowns. In fact, new plants should be allowed to have only single crowns or divisions. When they get straggly, start new plants from leaf cuttings and discard the originals. Some specimens can go for several years without getting straggly, while others become unattractive in less time.

Many African violet enthusiasts make the mistake of overfeeding. A good rule to remember is not to feed for the sake of feeding. When starting with well prepared soil, plants can go for about six months without feeding, but when they need a boost, it is better to use half the recommended proportion of plant food. You can use any African violet fertilizer or a balanced mixture, such as 5-10-5, that is not too high in nitrogen. Always remember that it is better to underfeed than to overfeed.

Need for Humidity

To increase humidity, rely on a humidifier or keep moist pebbles in the saucers in which the pots rest. When a number of African violets or other kinds of plants are grown together, they give off moisture and help to increase the humidity of the room. A bath from time to time with lukewarm water is helpful in this respect and also in keeping the foliage free from dust. If crowns get too thick, snap out some of the leaves with your fingers in order to allow more light to reach the buds.

African violets have the tendency to bloom all year if grown well. If they stop blooming, let up feeding them for a while to give them a rest. During the winter months, from November to February, it is advisable to give them little or no food, again in order to rest. If you find that they do not bloom in the summer, it is probably because they get overheated.

The best way to have clean plants is to start with healthy ones. Oftentimes, when plants become sickly, it is best to throw them out, particularly if you have a large collection. Destroy aphids and mealy bugs with an aerosol bomb,

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MICHIGAN HORTICULTURAL SOCIETY

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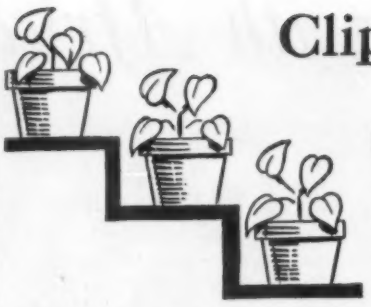

Clippings from CLUBS and SOCIETIES

Garden Center Director

Mrs. Herbert Marcus, president of the Dallas (Texas) Garden Center, has announced the appointment of L. G. McLean as director of activities at the Garden Center, which is located in Fair Park. A noted Southwest botanist, Mr. McLean was formerly director of the Fort Worth Botanical Gardens. To adorn the Fair Park with a variety of native and foreign plants and to set up a research program for garden clubs and societies in the Dallas area are some of the plans of the Center.

Sterling Bowl Winner

Mrs. C. W. Lafe of the White Oak Heights Garden Club, Pittsburgh, Pa., was the second winner of the $5,000 perpetual challenge trophy awarded the winner of the national rose and silver arrangement competition, the Sterling Bowl Tournament, held in the Jackson & Perkins rose garden at Newark, N. Y., on June 27. Contestants came from 25 states and Canada to compete for the Sterling Bowl Trophy, won last year by Mrs. Rolland L. Fifer of Louisville, Ky.

Second prize winner was Mrs. B. T. Tremaine of the Skaneateles Garden Club, Skaneateles, N. Y. Other finalists included: Mrs. George Steedman, Roanoke Rose Soc., Roanoke, Va.; Mrs. Charles E. Via, Grandin Court Garden Club, Roanoke, Va.; Mrs. George Goldson, Five Towns Garden Club, Woodmere, N. Y.; Mrs. Ernest Davids, New Rochelle Garden Club, Mt. Vernon, N. Y.; Mrs. Gerson T. Hirsch, Guild Garden Club of White Plains, N. Y., Pleasantville, N. Y., and Mrs. Marvin Rymer, Gentian Garden Club, Cleveland, Tenn.

The Pennsylvania Horticultural Society

389 Suburban Station Building, Philadelphia 3, Pa.

MR. GEORGE R. CLARK, *President* DR. J. FRANKLIN STYER, *Treasurer*
MRS. E. PAGE ALLINSON, *Secretary*

September Exhibition

Mrs. Harry Wood, Chairman, and the Exhibition Committee will stage a fall show in the rooms of the Society which will be of interest from both a horticultural and a decorative point of view.

Specimens of trees and shrubs which have particular value in the fall garden for color, berries or form, will be shown by the Arthur Hoyt Scott Foundation of Swarthmore College. These will be labeled for identification.

Mr. Charles Becker, Jr., of Haverford will exhibit specimens of annuals, perennials and vegetables.

The following members of local garden clubs, all exhibitors of outstanding ability will exhibit flower arrangements: Mrs. Packard Laird, Four Counties Club; Misses Ruth Barranger and Mary Freimuth, Garden Club of Springfield; Mrs. Carol Buten and Mrs. Lynn Clark, Old York Road Garden Club; Mrs. Norman Bemis and Mrs. Walter Smedley, Jr., Penn Valley Garden Club; Mrs. Robert Freeman, Planters Garden Club; Mrs. J. L. Nevill Smythe, Random Garden Club; Mrs. Richard W. D. Barringer, the Weeders, Mrs. Arthur P. Fenton, Strafford Garden Club.

The hours for the Exhibition are 9 A.M. to 6 P.M. on Monday, September 23rd and 9 A.M. to 3 P.M. on Tuesday the 24th.

During the week of the 23rd paintings of trees and plants in pastels and water colors will be exhibited in the rooms by Miss Eleanor S. Perot of Langhorne, Pa.

The public is invited to the above events.

New Books in the Library

KRANZ, FREDERICK H.—Gardening Indoors Under Lights

BOOTH, CHARLES O.—An Encyclopaedia of Annual and Biennial Garden Plants

DETROIT now has a floral clock to rival the beauty of a famous one in Edinburgh, Scotland. In front of the old City Hall, Department of Park and Recreation workers are shown completing the red, green and pink creation by mounting clock hands on an electric motor. The 24-foot clock is edged in colorful red wax begonias on the top half and blue ageratum around the base. Numerals are in gray-green santolina, outlined by pink alternanthera. Red and bright green alternanthera complete the pattern around the center. Points of gray-green kleinia accent the red and blue edging. Eventually four large beds of annuals and cannas will flank the clock. The new quarters of the Michigan Horticultural Society are in Old City Hall.

Charles H. Perkins Honored

In recognition of his "lifetime work with roses", Charles H. Perkins, president of the Jackson & Perkins Co., Newark, N. Y., was presented the Large Gold Medal of the Massachusetts Horticultural Society. The presentation was made, during the recent Rose Festival at Newark, N. Y., by Arno H. Nehrling, Executive Secretary of the Massachusetts Horticultural Society, who cited Mr. Perkins for his efforts toward making the rose the nation's best loved flower. Fleeta Brownell Woodroffe, who spoke in behalf of representatives from leading garden magazines and newspapers, commended Mr. Perkins for his promotion and development of the floribunda rose to a level where it has changed the entire home landscaping picture throughout America.

Victor H. Ries Fellowship

In honor of his more than 30 years of service to horticulture, the Ohio Association of Garden Clubs is sponsoring a Fellowship Fund for Prof. Victor H. Ries, who retired recently from Ohio State Univ. In addition to his long term as Extension Floriculturist with the Extension Service, Prof. Ries has also served as secretary of the Ohio Association of Garden Clubs since 1934. The Victor H. Ries Fellowship Fund will be used for graduate research in the fields of floriculture and ornamental horticulture at the University.

Flower Show School

The 1st District of the Garden Club Federation of Pennsylvania will sponsor Course III of the Flower Show School on Oct. 16-18 at the Strawbridge & Clothier Department Store in Philadelphia. Instructors will include Mrs. Emily Steubing, who will talk on "Design" and "Flower Show Practice", Mr. George H. Gillies, who will speak on "Horticulture", and Mrs. Emma Cyphers, whose subject will be "Color". For information write: Mrs. James C. Bleloch, Registrar, 8144 Ridge Ave., Philadelphia 28, Penna.

Way with African Violets

Continued from page 479

but if mites are present, it is better to destroy infected plants. Stem rot, not likely to occur with plastic pots, is commonplace when African violets are grown in clay pots. To prevent the stems from touching the edge of the pots, and hence rotting, place tinfoil along the rims.

Varieties number in the thousands, although there are about 1000 that are registered. In color, these are mauve, lilac, violet, blue, rose, pink and white. As yet there is no yellow. Choosing varieties is often a matter of preference, but some of the singles which I think are outstanding are Snow Prince, White Orchid, Thunderbird (white), Pink Caress, Pink Delight, Pink Cheer, Georgia Peach (pink), Blue Moon (purple) and DuPont Pride (blue and white).

Among the doubles, which stay in bloom longer, I would suggest Pink Cushion, Ohio Bountiful (pink), Blue Peak, Blue Eva, Gent's Blue Cluster and Delight (purple).

Most of the fun in growing African violets comes from collecting new and different varieties. This keeps one's interest alive and constantly growing. Enthusiasts also profit from joining the African Violet Society of America, which now has nearly 15,000 members.

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Courses For Amateurs

THE *Massachusetts Horticultural Society announces the following series of practical courses for amateur gardeners to be given during the fall and early winter term.*

Practical Gardening, *8 sessions, Wednesdays, 10-12* A.M., *Sept. 25, Oct. 2, 9, 23, 30, Nov. 13 and 20, plus field trip to be decided by group. Fee $12.00.*

Greenhouse Gardening, *6 sessions, Fridays, 10-12* A.M., *Nov. 22, 29, Dec. 6, 13 and 20, plus field trip to be decided by group. Fee $10.00.*

Advanced Greenhouse Gardening, *4 sessions, Thursdays, 10-12* A.M. *Oct. 31, Nov. 7 (field trip), 14 (field trip) and 21. Fee $7.00.*

House Plants, *4 sessions, Thursdays, 10-12* A.M., *Sept. 26, Oct. 3, 10 (field trip) and 17 (field trip). Fee $6.00.*

All courses will be taught by Mrs. Lucien Taylor, and, except for the field trips, will be held in Horticultural Hall, 300 Massachusetts Avenue, Boston. They are open to anyone interested, and the fee in each case includes the materials used in the laboratory sessions. Enrollment is limited to 20. To attend, send application and remittance to the registrar, Mrs. Laura R. Hatton, Horticultural Hall, Boston, Mass. For additional information, telephone KEnmore 6-9280.

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Plant Blueberries Now

Continued from page 456

Among the many advantages of a mulch are that it helps to conserve soil moisture, keep down weeds and eliminate the need for frequent cultivation. Then, too, a mulch offers a better rooting medium for the plants. All these benefits result in greatly increased yields and berry size, and one study, covering a six-year period, showed that sawdust mulched plants produced one and one-half times more fruit than unmulched ones. Another advantage of sawdust, especially for the home gardener, is its attractive appearance.

A five year plant of the old variety Coville under recommended method of cultivation

Blueberries respond vigorously to fertilizer applications, particularly those high in nitrogen. Upland soils apparently supply ample quantities of the major fertilizer elements except nitrogen. In these soils, blueberries utilize the ammonium form of nitrogen more readily than the nitrate form.

On soils where the pH is above 5.0, ammonium sulfate is recommended as a source of nitrogen. In addition, its sulfate radical tends to lower the soil pH toward a more desirable range. The proper amount to use depends upon the age of the plant. On mulched plantings, give young plants one quarter of a pound, but as plants mature, increase the amount gradually until each plant receives approximately a half pound per season.

Fertilizer is best applied in early spring before growth starts. Broadcast on an area slightly larger than the spread of the branches, but since ammonium sulfate is readily soluble, it need not be worked into the soil. Where soils, however, are relatively acid, below pH 5.0, any form of nitrogen is satisfactory for soil micro-organisms to convert the nitrate form to the ammonium form. On light soils, an occasional application of a complete fertilizer, such as 5-10-5, is desirable.

One of the main problems that home gardeners have encountered with blueberries on upland type soils is a chlorotic condition, or yellowing, of the leaves. In addition to affecting leaf color, it causes weak, dwarf and unproductive plants. In severe cases, or where the condition is allowed to persist, death may result.

This chlorotic condition, associated with a deficiency of iron, is apparently due to the inability of the blueberry to utilize iron, though it is present in the soil. It is common to see blueberry plants suffering from a severe iron deficiency, while other plants growing in the same soil show no signs of it whatsoever. This problem and the difficulty of combatting it have limited blueberry production on upland soils.

A solution to this difficult problem was realized in 1950 when specially formulated iron containing compounds, known as iron chelates, became available for agricultural use. These compounds, readily obtainable from garden supply houses, offer an easy, rapid and long term solution to the chlorosis problem. One to three ounces of a chelated iron compound, worked into the soil surface beneath a severely affected plant, will correct all visual symptoms within a short period of about 30 days. Plants so treated will be free of chlorosis for two to three years.

In many cases, where plants are growing on upland soil, applications of chelates have been beneficial even though marked symptoms were not evident. Since there are a number of different formulations of iron chelates on the market, the grower must carefully follow the manufacturer's directions on the container. In some instances, foliage applications of chelates are recommended for even quicker results.

Annual pruning is essential, since well pruned plants are more productive and attractive and have larger berries. A blueberry plant produces large fruit buds on the young twigs, while below these buds, on the same twigs, are the smaller leaf buds. During the first and second year after planting, cut off all flower buds in order to encourage larger, more productive plants in future years. As the plants mature, however, allow some flower buds to remain.

On established plants, remove some flower buds each spring in order to maintain large berry size, regular production and healthy growth. Since the best fruit appears on the most vigorous fruiting wood, be certain to eliminate weak, short and slender twigs. When a very heavy bud set occurs, head back the most vigorous fruiting twigs by partially removing the flower buds.

The First Three Months In My New Greenhouse

Continued from page 476

I also devised a way to suspend larger pots to wires fastened to holes bored through the main support of the house. Freesias, ivy geraniums, gerberas, petunias and begonias are especially happy in this location, where they miss dripping on the border plants.

Every beginner has the heating problem to cope with. I was advised to use electricity, which though more costly, would be more dependable. Two electric heaters were installed, and on certain memorable nights, when the mercury dropped down, finally reaching 20° F. below zero, I could hear both heaters, from my room just above, laboring on and on, hour after hour. At last, about 3 A.M., I crept downstairs and switched them off for a few moments. When morning dawned, crisp, clear and bitterly cold, not a plant was lost. We lived through the electric bill, and I comforted myself with the thought that no other month could possibly be as severe as this.

Problem of Snow

One serious menace was the fear of possible damage from snow sliding down from the roof above. Our carpenter solved this problem by erecting three strong iron guard rails, running along the house roof, just above the greenhouse. After several heavy storms, I heard great thuds from heavy piles of snow, which dropped harmlessly, at either end of the guard, on the ground below.

The icicles, however, were another worry. During one storm, when the wind showered crystal ice-chips on the glass, I listened with alarm, though no damage was done. The dripping from above, however, was another matter. When the icicles grew longer and heavier, I finally decided to do something about it. With a basket securely tied to my left wrist, each morning, I would lower the upper sash on each of the three windows directly above the greenhouse and knock the icicles into the basket with a small hearth broom which I held in my right hand.

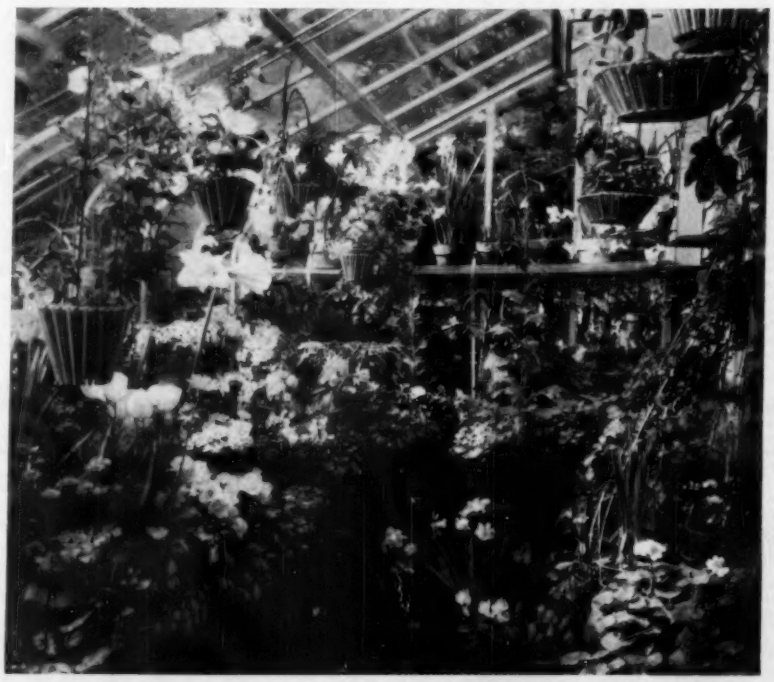
After three months, it was amazing to see so much color in my greenhouse. There were hanging pots of pure white, yellow, lavender and pink freesias. Large, ruffled white petunias, lifted from the summer garden, were again a mass of bloom. Gay daffodils, crocus, grape hyacinths, scillas and snow drops made it seem like spring, while white nicotianas and foxgloves, potted in the fall as young plants as an experiment, were tall and thrifty. Three hybrid clematis, Nelly Moser, Elsa Spaeth and Fairy Queen had formed promising buds.

Extremely vigorous were plants of *Passiflora alato-caerulea,* while the broad step leading into the living-room was decorated with large Mount Vernon pots of French or tree ivy (*Fatshedera lizei*), six feet tall, grown from cuttings, and large colorful geraniums. In the living-room, taken from the greenhouse for their fragrance, were heliotrope and daffodils.

To illuminate my greenhouse at night, I have placed a fluorescent bar of light above the door. When the winds rage and snow piles up against the house, it is a thrill to look out from our fireside to the warmth, color and beauty of the flowering plants within our little greenhouse.

Remember, if you have a greenhouse, you must make up your mind to spend some time in it. My problem is just the opposite, How can I make up my mind to spend time anywhere else?

Exterior view of the author's greenhouse three months after building



This flowering section shows what was accomplished in three months

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Succeeding with Auriculas

Continued from page 457

they can be allowed to develop until another spring. By then, many will reach flowering size. This, I think, is one of the most exciting experiences, and it is a real thrill to go each morning to the frame to see what new flowers have opened.

From the beginning I have grown plants for my garden and not in frames and pots as specimen plants for exhibition purposes. Living in this section of America, far away from the growers of the northwest, my methods have been different, yet the results have given me satisfaction and enjoyment.

Here in southern Maine, the main display of bloom comes during May, covering almost the entire month, with the height around the middle. In autumn, after the fall rains, and when plants have had an annual top dressing of loam and bonemeal, many flowers appear. Then I like to gather little nosegays for wearing on lapels.

In my rock garden, the most choice spots are reserved for the rare, small plants from the mountains, including the tiny bulbs. In all the other places, the auriculas are used lavishly, and everywhere they complement the rest to make up the fabric of the attractive spring display. Used in this manner, a picture of rare beauty and refinement has been created.

Plant Among Rocks

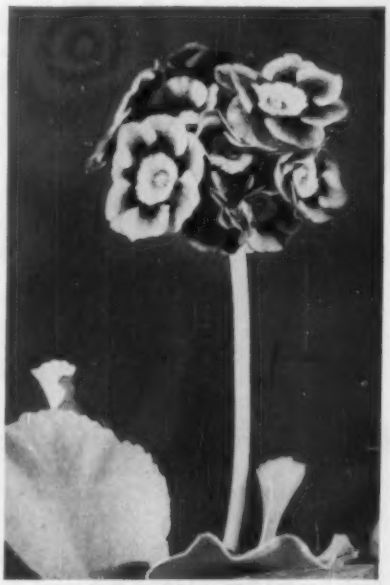
I like to plant them close to rocks, in walls, in crevices and by the sides of the steps. Recently I made a wall and planted it thickly with the rosettes of auriculas, which already look natural and at home. The clean, bright foliage is attractive in itself.

Here I have also planted the so-called alpine auriculas, which usually have many shaded flowers with white or gold centers. Equally present are the gardens or border auriculas. These often have "meal" on their foliage and flowers and a color range that is exceptionally extensive.

Little planted is a class known as show auriculas, except for a few self types, which have striking self colors and snowy white eyes. Edged kinds in this class are little suited to the out-of-doors and look out of place in the garden picture. Since man-made hybrids are exotic they are primarily exhibition material.

The following description of some of the colors is incomplete, and one has to see the hues to realize their great diversity. There is deep marine blue, with snow-white center; black, with snowy centers; cherry red, with white eye and brown, ranging from dark, velvety shades to light buff. Others include lavender and light blue, pink, creamy white and rich reds in the alpine class.

Included also are colors that shade from the center out in monochromatic effect. In the border class there are unusual delicate shades of gray and beige, with centers dusted with meal, along with many other variations. In grouping colors, use deep shades with the paler sorts.



Alpine auricula, Barnhaven Blue

The lovely flowers of the auricula have been used extensively in art. They are the primulas used by the French and Flemish painters in old flower prints and paintings.

Another reason it has been a pleasure to work among auriculas is that the leaves, as well as the blossoms, give of a delightfully illusive fragrance. Even the smallest seedling has it, faintly suggesting sweet-scented geraniums, but infinitely more delicate.

The wide color range in the flowers is hardly equalled in any plant family. The richness and velvety texture of some blossoms suggests a likeness to pansies, but shades and subtle hues, not usually found in other flowers, are common in an extensive collection of auriculas. It has been a wonderful experience through the years to use these rich and beautiful colors in the garden. When plants reach the size to be divided and are replanted in groups and drifts of one color, truly lovely effects can be achieved.

For me, growing these primulas from seed has been a great satisfaction. With patience and a little imagination it has been possible to bring together many other auriculas as companions for the old buff which started me off in this great adventure in 1926.

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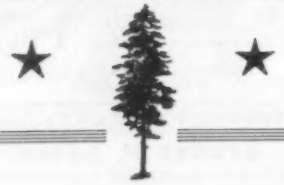

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Prune Your Yews Correctly

R. E. Newell

YEWS ARE, without question, the most useful and permanent evergreens in our gardens. Except for the few varieties that are very slow growing, most grow quickly. In fact, they develop too rapidly to be allowed to go without pruning when used in foundation plantings or formal gardens or as hedges. The Japanese yew (*Taxus cuspidata*) and Japanese upright yew (*T. cuspidata capitata*) are examples of rapidly growing kinds. Even the dwarf Japanese yew (*T. cuspidata nana*) does not remain low without some annual pruning.

The size and shape of yews may be controlled by pruning in such a way so as not to destroy their natural beauty. Yet, all too often, we see them pruned or sheared in unattractive shapes and forms. Allowed to grow unpruned, yews soon become overgrown and too large for their original purpose. Although it is best to cut back the long shoots annually with hand shears to prevent overgrowth and maintain naturalness, many gardeners shear so severely that the grace of their plants is completely destroyed.

Prune Second Time

When growing young yews in the nursery row, it is necessary to shear to induce them to branch at the base and fill out properly. If this is done early in the season, new growth will soon give the plants a natural appearance for the rest of the year. After this, a second pruning is rarely required. If hedges are trimmed in early July, after the heavy spring growth has hardened, they seldom require another pruning, except to keep them strictly formal.

Upright yews, such as the Japanese upright, Hatfield and Hicks yews, usually require rather severe pruning to prevent snow damage. Allowed to develop without some corrective pruning, they become thin and loose in growth, so that sleet and wet snow in winter may cause considerable damage. By pruning some of the long shoots at the sides and top, slightly rounding and narrowing the plants at the top, there is much less danger of winter breakage.

To keep the type Japanese yew low, cut back the long terminal growths at the top. The spread of the plant may also be controlled in the same manner. This does not mean shearing, and remember that irregularity keeps the plants more interesting.

In moist, shady locations, the native American yew (*T. canadensis*) grows ideally. It needs annual pruning, however, to keep it bushy. This may be done, in an informal manner, in summer, although extra long shoots can be removed any time. In full sun, the American yew does not have an attractive color, but in shade it usually stays green.

The spreading English yew (*T. baccata repandens*) is also excellent for shade or partial shade in protected places. Its dark green, heavy needles and drooping habit make it a favorite, but it needs an annual pruning in June or early July to control its spread.

One of the best new varieties of yews is *T. media nigra,* noted for its dark green color and dense growth habit. To keep it to the desired size, prune back the long terminal branches at the beginning of the growing season.

They Live Long

Yews of all kinds are long lived. If you have plants that have become too large, do not be afraid to prune them back. It is even possible to cut them back severely to the desired height in one operation or to do it gradually, depending upon whether you are willing to wait a few years for the new growth to fill in.

After pruning in early June, feed plants with a chemical and organic fertilizer, one or two handfuls per plant, depending upon size, and additional new growth will soon cover the bare spots. After feeding, water heavily and repeat at frequent intervals thereafter if the soil becomes dry. Light pruning, which does not affect the beauty of plants, may be practiced at any time.

Men's Garden Clubs Officers

At the recent convention of the Men's Garden Clubs of America, held in Portland, Ore., Dr. R. C. Allen, Director of Kingwood Center, Mansfield, Ohio, was elected president to succeed Charles J. Hudson, Jr., of Atlanta, Ga. Other new officers include John T. Cochran, Detroit, Mich., 1st vice-president; Lee Fetzer, Rockford, Ill., 2nd vice-president; Evan J. Evans, Cleveland, Ohio, 3rd vice-president; George A. Spader, Morrisville, N. Y., executive secretary; and Larry R. Hubbard, Westfield, N. J., treasurer.

The organization's highest award, the Men's Garden Club Gold Medal, was awarded to Jan de Graaff of the Oregon Bulb Farms, Gresham, Ore, for his epoch-making work with lilies and daffodils. Dr. A. H. Hermann of Denver, Colo., received the Johnny Appleseed Award for his outstanding achievements as an amateur gardener.

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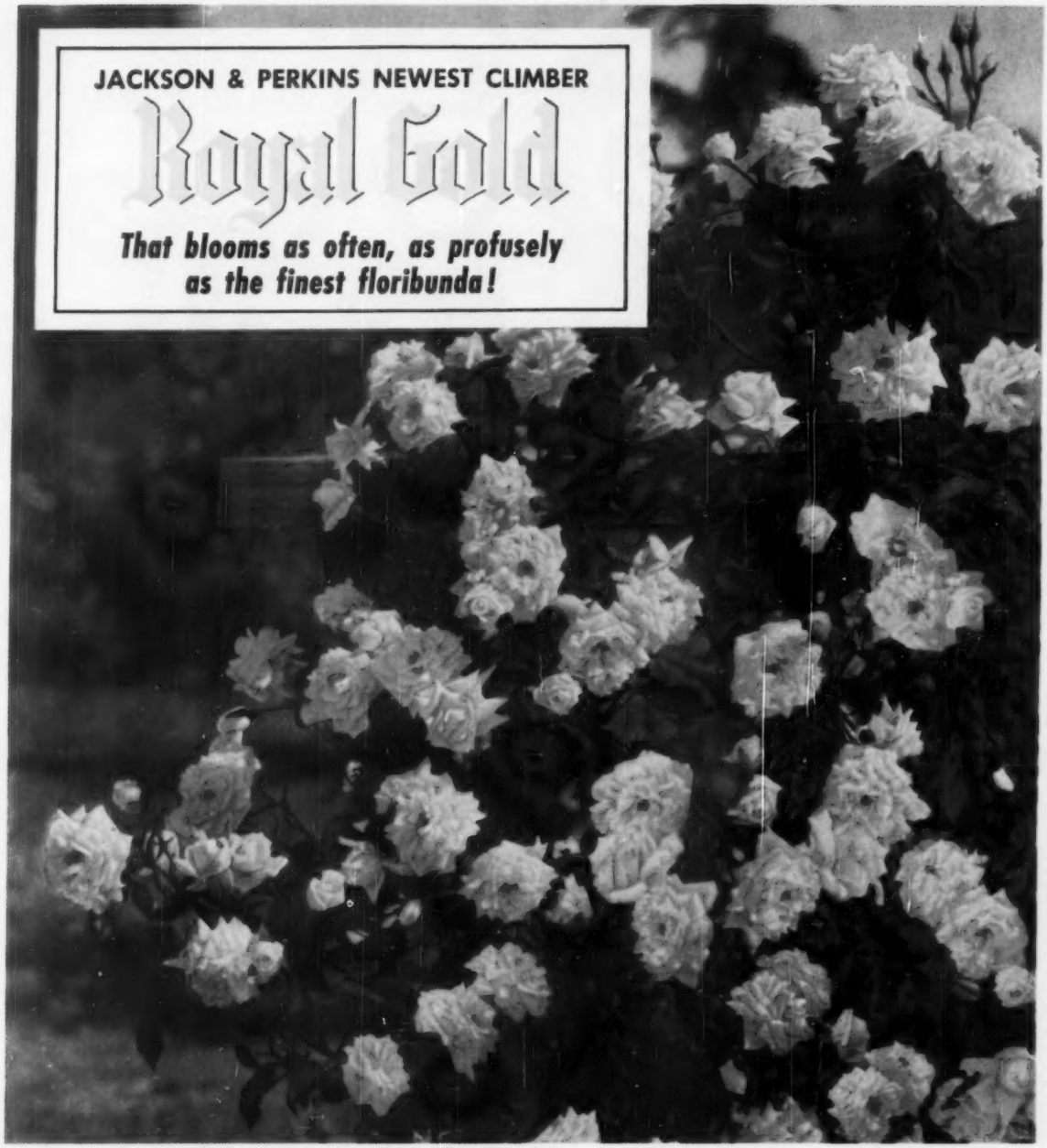

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